OKI®

OKIPOS 425S

User's Guide

59336202

Document Title and Part Number

OKIPOS 425S User's Guide

P/N 59336202, Revision 1.1

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Revised Edition: April, 2007

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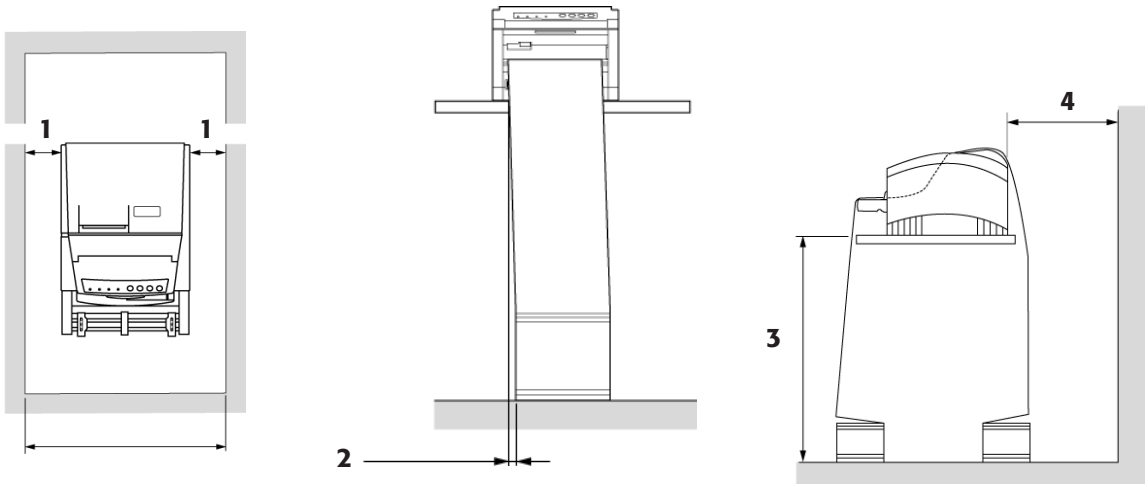
1. Setting Up the Printer

1.1. Select a Location

- Firm, level surface capable of supporting approximately 7kg (15.4 lbs).
- Clearance to open cover
- At least 100mm (4 inches) additional clearance on both sides for adequate ventilation
- Nearby power source
- Room temperature: 5° to 40° C (41° to 104° F)
- Relative humidity: 20 to 80%
- Away from direct sunlight
- Do not place the printer near a heater.
- Do not place it in a location with abrupt temperature changes.
- Do not let condensation develop on the printer.
- Do not place it in a dirty location.
- Do not place it near a device with abrupt consumption power fluctuations.
- Do not place it near a device producing any noise.
- Do not place it near an object discharging static electricity (i.e., on a carpet).
- Do not place it near a location where it is subjected to any impacts or vibrations.
- Do not place it near a strong magnetic field or source of corrosive gas.

1.2 Where to install your printer

Install your printer on as flat and stable a desk as possible. Also, make sure that the following installation space is reserved for services such as operation, daily check and replacement of supplies to maintain the performance of your printer.



1 Approximately 100mm
2 50mm or less
3 750mm
4 600mm or more

1.3 Unpacking

Getting Started

Check the contents:

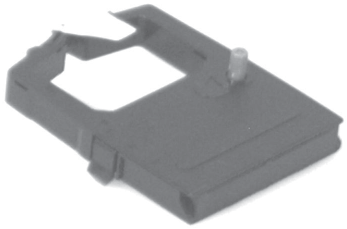
1 Printer

2 Ribbon Cartridge

If anything is missing or damaged, contact your dealer immediately.

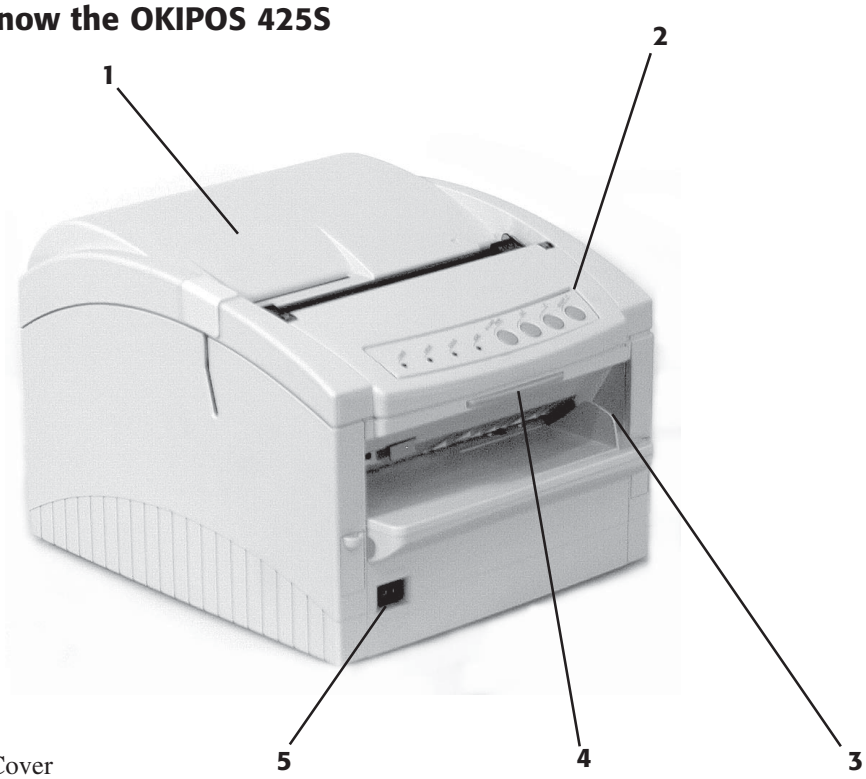
1

2



1.4 Installing the Printer

Getting to Know the OKIPOS 425S



1 Printer Cover
2 Control Panel
3 Paper Guide
4 Cover Open Bar
5 ON/OFF Switch

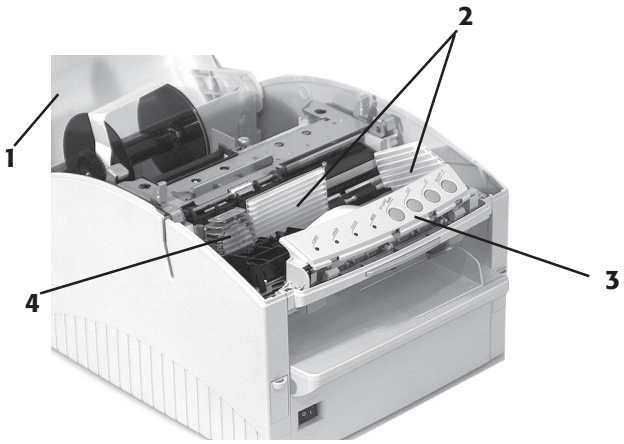
1.4.1 Remove the Shipping Restraints

Important! Save the shipping restraints and packing materials in case you ever need to ship the printer.

1. Remove the five pieces of shipping tape.

2. Press the Cover open bar and open the printer cover.

3. Remove the two printhead shipping restraints and red rubber, and detach the two pieces of tape.



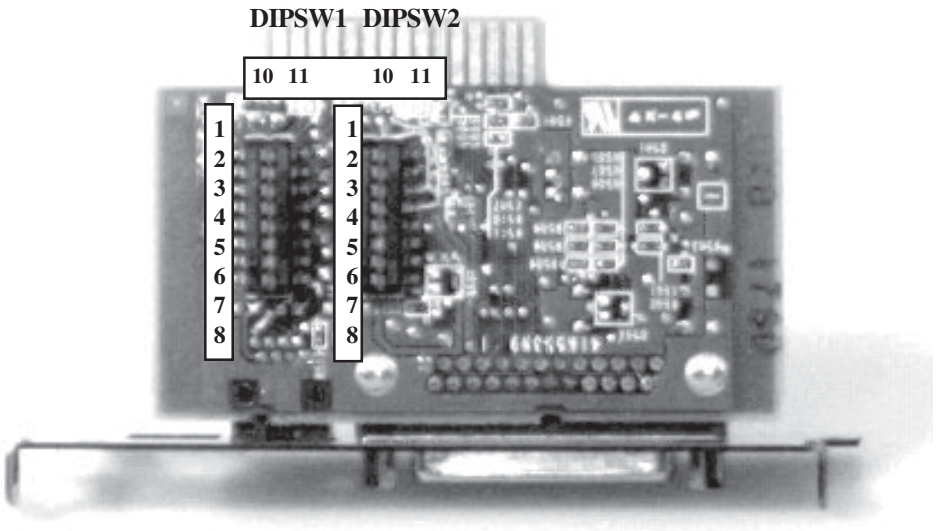
1 Printer Cover
2 Shipping Restraint
3 Control Panel
4 Red Rubber

1.4.2 Setting the Interface Board Assembly

1.4.2.1 Setting the DIP Switches (RS-232C)

DIP SW		Function	Switch Setting			
			ON			OFF
DIP SW1	1	Selects the data bit length	7 bits			8 bits
	2	Selects between the presence and absence of parity bits.	Present			Absent
	3	Selects the parity	Even Parity			Odd parity
	4	Selects the protocol	XON / XOFF			Ready / Busy
	5 – 7	Selects the signaling speed	5	6	7	Signaling Speed (BPS)
			OFF	OFF	OFF	1200
			OFF	OFF	ON	2400
			OFF	ON	OFF	4800
			OFF	ON	ON	9600
			ON	OFF	OFF	19200
			ON	OFF	ON	Reserved
			ON	ON	OFF	Reserved
			ON	ON	ON	Reserved
	8	Selects the customer display	Connect			Disconnect
DIP SW2	1	Selects the #6 pin reset signal	Enable			Disable
	2	Selects the #25 pin reset signal	Enable			Disable
	3	Selects the display of received data errors	Ignore (error conversion is not performed)			Convert to receive error characters
	4	Selects the mode of circuit test	Select			Deselect
	5	Selects the hard reset signal	Enable			Disable
	6	Selects the software reset signal	Enable			Disable
	7	N/A	-			-
	8	N/A	-			-

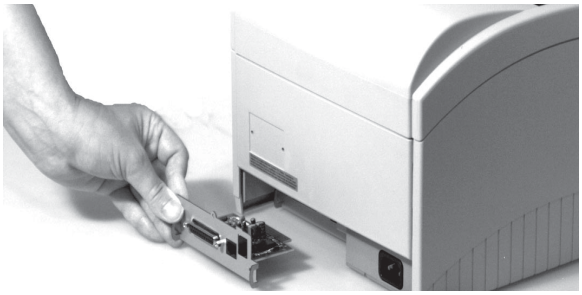
* There are three types of errors: the parity error, the framing error, and the overrun error.



10 = OFF; 11 = ON

1.4.2.2 Installing the Interface Board Assembly

(1) Insert the Interface Board Assembly in the direction of the arrow.

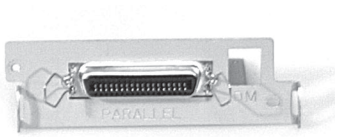


(2) Secure the Interface Board Assembly with 2 screws.

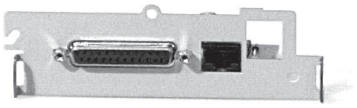
1.4.3 Connecting the Computer

This printer supports either Parallel Interface or RS232C when the interface board is installed in the printer. To install the interface board, refer to Section 1.4.2.2.

1. Check to be sure that the printer's power is OFF.
2. Connect the interface cable to the connector shown below.
   A) Parallel Interface
   B) Serial Interface



A



B

3. Secure the connector by its latches or screws.

1.4.4 Connecting the Cash Drawer

1. Check to be sure that the printer's power is OFF.
2. Insert the cable connector from the Cash Drawer to the area indicated by DM above until you hear a clicking sound.

1.4.5 Connecting the Customer Display

With the RS232C interface option board installed, Customer Display can be supported.

1. Check to be sure that the printer's power is OFF.
2. Insert the cable connector from the Customer Display into the area indicated by C Dis above until you hear a clicking sound.

1.4.6 Connecting the Power

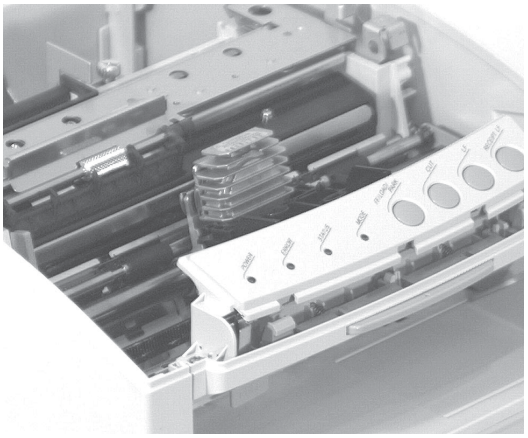
1. Attach the power cord to the back of the printer.

2. Plug the opposite end into a suitable grounded outlet.

1.4.7 Installing the Ribbon Cartridge

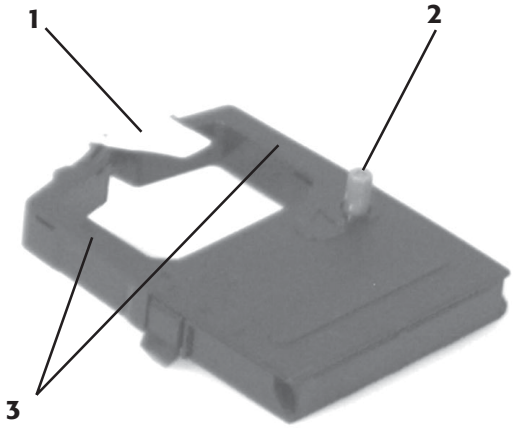
1. Make sure the printer is turned OFF.
2. Press the Cover open bar and open the printer cover.

3. Center the printhead.



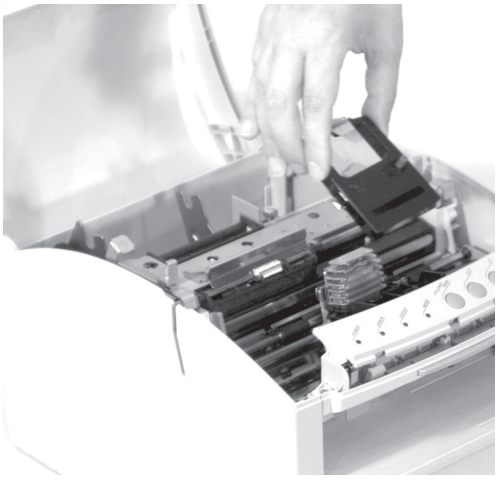
4. Unpack the ribbon cartridge.

Important! ***Do NOT remove the ribbon shield from the ribbon!***



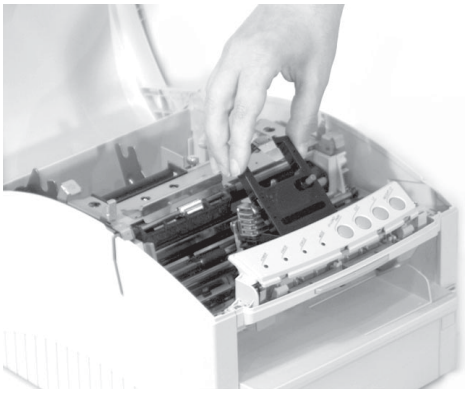
1 Ribbon Shield
2 Take-up Knob
3 Grip Points

5. Install the new ribbon cartridge.
   1) Hold the ribbon cartridge as shown below.

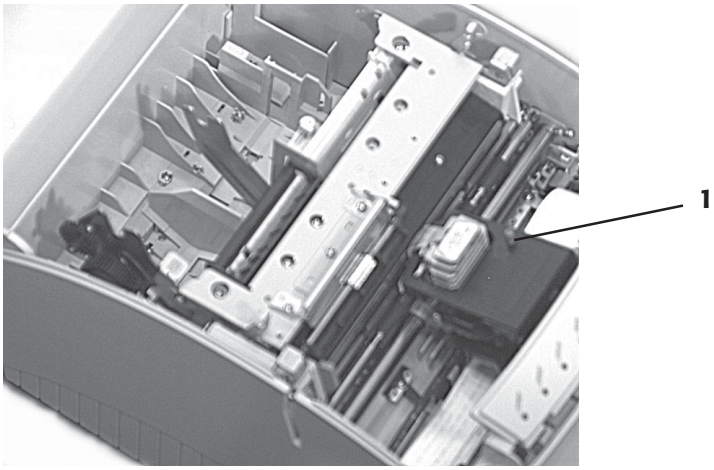


   2) Fit the grooves in the flat end of the cartridge over the posts on the ribbon plate.

3) Lower the front of the cartridge over the printhead until it snaps into place.



4) Turn the knob (1) in the direction of the arrow on the cartridge to take up the ribbon slack.



1.5 Installing the Paper

Paper Specifications

Maximum thickness: 0.3 mm (0.012 inches)

Media	Type	Width	Length	Weight	Number of copies	Thickness	Diameter
Cut-Sheet Paper (Sip/ Validation) Note 1	Single part (slip)	105 to 215.9mm (4.13" to 8.5")	70 to 297mm (2.76" to 11.7")	52 to 105 g/m^2 (14 to 28lb)	-	0.065 to 0.13 mm (0.0026" to 0.005")	-
	Single part (validation)	105 to 215.9mm (4.13" to 8.5")	70 to 297mm (2.76" to 11.7")	65 to 81 g/m^2 (17 to 21lb)	-	0.08 to 0.1mm (0.0031" to 0.0039")	-
	Multi part carbon lined or pressure sensitive (slip)	105 to 215.9mm (4.13" to 8.5")	70 to 297mm (2.76" to 11.7")	34 to 40 g/m^2 (9 to 11lb)	Original plus 4 copies	0.3mm max. (0.012" max)	-
Cut-Sheet paper (counterfoil/ stub)	Single part only	70mm or more (2.76" or more)	40mm or more (1.57" or more)	65 to 81 g/m^2 (17 to 21lb)	-	0.08 to 0.1 mm (0.0031" to 0.0039")	-
Roll paper Note 2	Multi part pressure sensitive	69.5mm/76.2mm $\pm$ 0.5mm (2.73"/3" $\pm$ 0.02")	-	52 to 81g/m^2 (14 to 21lb)	Original plus 1 copy	0.18mm max. (0.007" max.)	101.6mm max. (4" max)
Sprocket Paper (Tractor) Note 3	Single part	76.2 to 215.9mm (3" to 8.5")	76.2 to 355.6mm (3" to 14")	52 to 81 g/m^2 (14 to 21lb)	-	0.065 to 0.1mm (0.0026" to 0.0039")	-
	Multi part carbon lined or pressure sensitive	76.2 to 215.9mm (3" to 8.5")	76.2 to 355.6mm (3" to 14")	34 to 40 g/m^2 (9 to 11lb)	Original plus 3 copies	0.27mm max. (0.0l" max)	-
	Multi part interleaf	76.2 to 215.9mm (3" to 8.5")	76.2 to 355.6mm (3" to 14")	38 to 45 g/m^2 (10 to 12lb)	Original plus 2 copies	0.27mm max. (0.01" max)	-

Note 1: ***All part must be glued at the top. Multipart is slip only.***

Note 2: ***The standard paper weight is 57g/m^2 (15lb) for the first sheet and 45 g/m^2 (12lb) for the second sheet of multipart paper.***

Note 3: ***Multiple part paper should be fastened by spot-pasting or crimpling on both sides and should be free of wrinkles.***

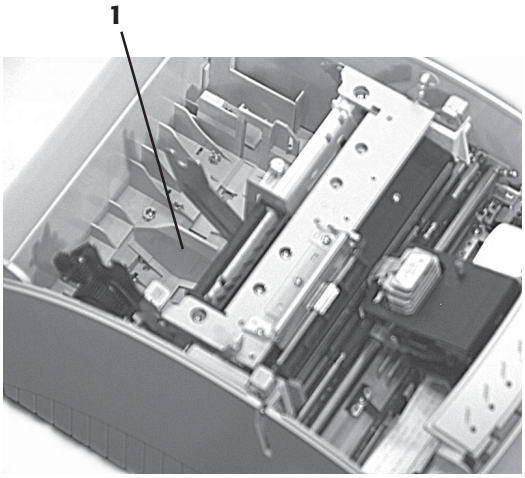
1.5.1 Roll paper

1.5.1.1 Adjusting the Roll Paper Guide

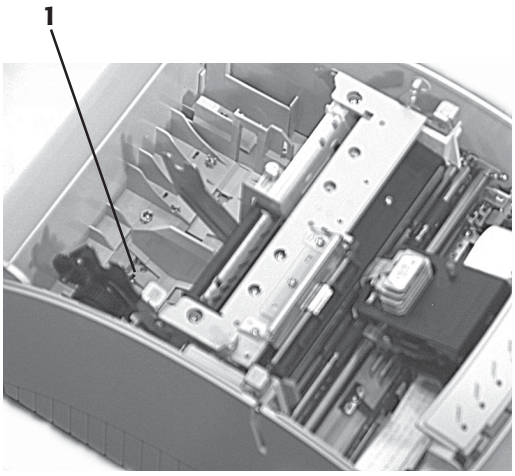
1. Adjust paper guide A (1) to the paper width.

   Paper width: 2.75 inches (69.5 mm) or 3.00 inches (76.2 mm)

   1) When the printer is shipped, the paper width is set for wide roll paper (3 inch or 76.2 mm width)

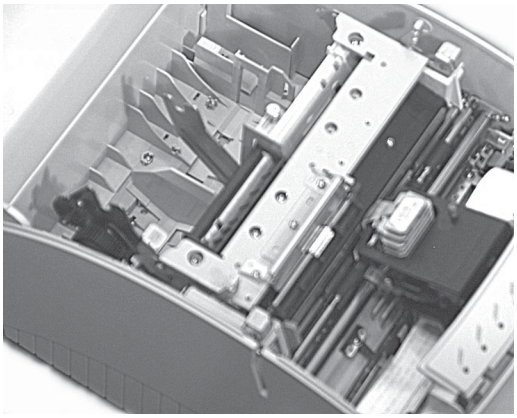


   2) To use narrow roll paper (2.73 inch or 69.5 mm width), hold up the roll paper guide and move it to the left to insert into the hole (1) at the lower frame.

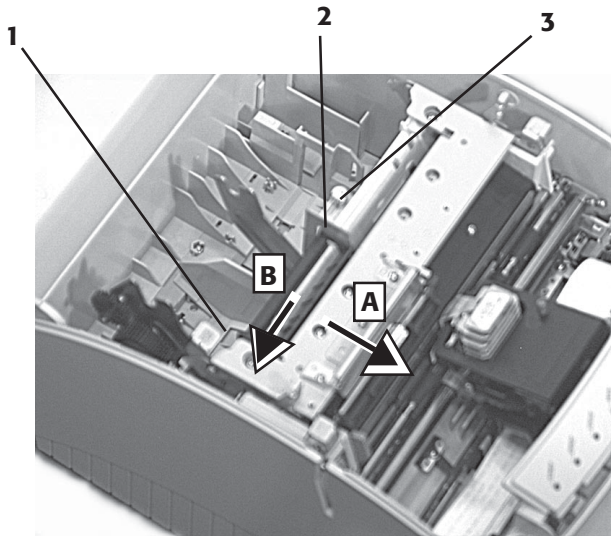


   3) The figure below shows the proper guide position for narrow roll paper (2.73 inch or 69.5mm width).

   (To return the guide to the position for wide roll paper, reverse step 2).



2. Adjust paper guide B to the paper width.
   1) Pull out the set paper in arrow direction (a) and push it in the arrow direction (b) until it stops or until it touches the inside of the Guide-Rear edge (1).
   2) Keeping the paper in position, turn the adjusting screw counter-clockwise to release the paper guide B (2) and adjust it to fit the roll paper edge. After paper width adjustment, turn the screw (3) clockwise to fasten the paper guide B.

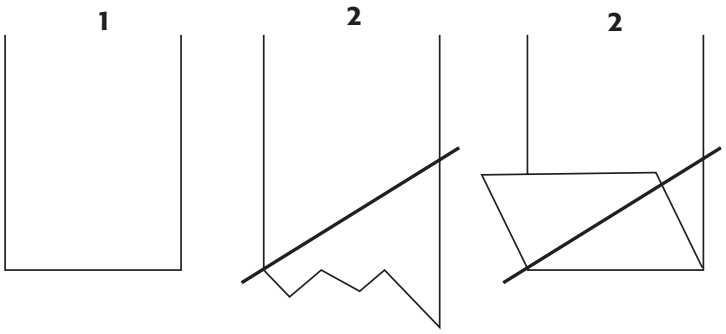


1.5.1.2 Loading the Roll Paper

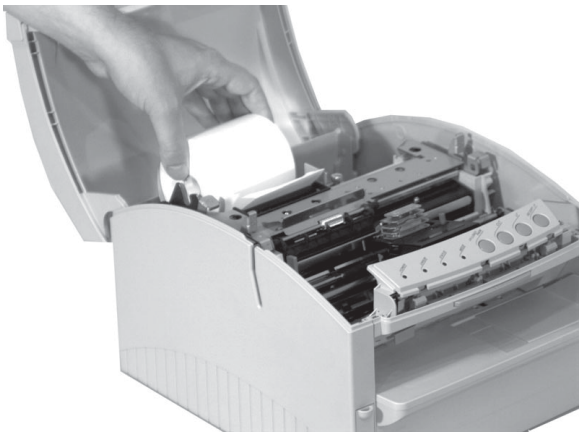
Use roll paper that matches the specifications.

Note: The printer must be turned on before installing the roll paper.

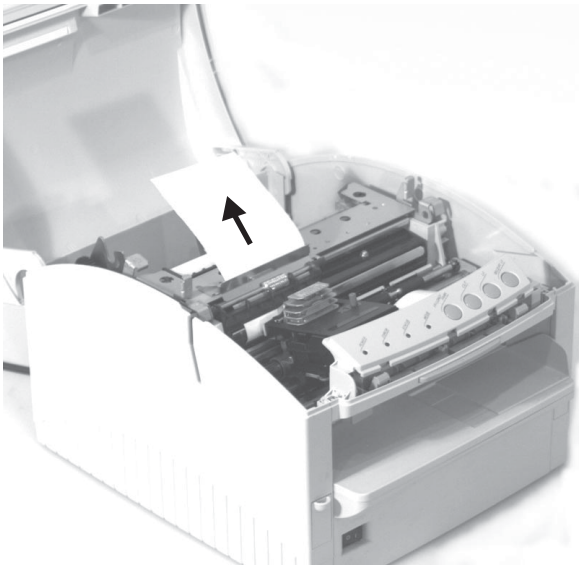
1. Fold the paper so it is exactly straight and even (1), and will not tear off jaggedly (2).



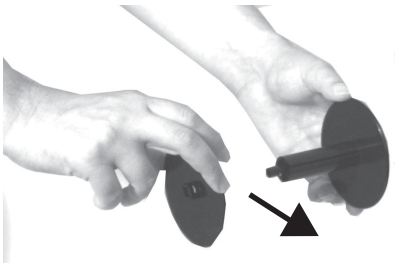
2. Turn on the printer and open the printer cover. Remove the rewinder.
3. Insert the roll paper as shown below.



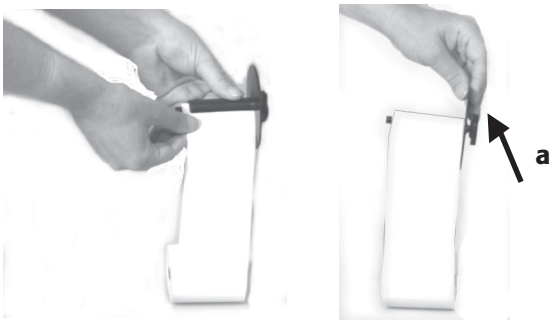
4. Insert the tip of the paper into the paper inlet as far as it will go, and feed the roll paper until the paper comes out from the top of the printer.



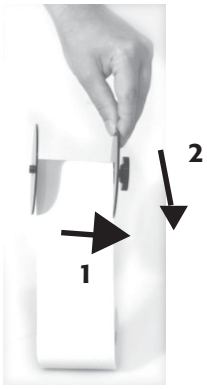
5. When using the rewinder, follow the steps and the illustration below.
   1) Turn the flange into the arrow direction and remove it.



   2) Insert the tip of roll paper into the groove of the rewinder as shown in the detail figure.
   Then, turn the rewinder into the arrow direction to wind the roll paper around it 2 or 3 times.



   3) Insert the flange into the rewinder (to the arrow direction 1) until it stops, then turn it into the arrow direction 2 to lock.



   4) Mount the rewinder on the printer.

   Note: When using narrow roll paper (2.73 inch or 69.5 mm width), turn over the flange as the arrow (e) and then mount it following the above procedures 3) and 4).

   Note: The flange can be demounted in the reverse procedures to its mounting.

   Note: This printer can use two kinds of roll paper. Their widths are 69.5mm±0.5mm and 76.2mm±0.5mm.

Roll papers other than the above are outside the guarantee, and we recommend these papers not be used. If you use unrecommended roll papers and have problems, we will not guarantee either the printer or the performance. Even roll papers outside the above defined range can be used by inserting the Spacer that comes with the printer, if the space between the Flange and the Roll paper is 1mm. You must test thoroughly before you decide to use it, to make sure that there is no problem.

6. Close the printer cover.

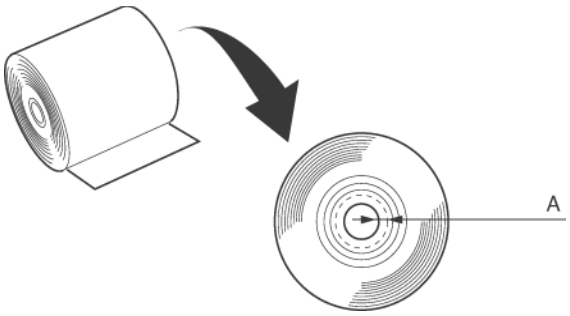
1.5.1.3 Adjusting the Roll Paper Near End Sensing Position

The paper near end detector detects when the paper is almost gone by measuring the diameter of the Roll paper.

If you want to change the amount of paper remaining when the printer stops printing, follow the steps below to adjust the paper near end detector.

Note: If the inner diameter of the Roll paper core is more than 26mm (1.02 inch), the Roll paper near end detector may not work properly.

1. Open the printer cover and remove the rewinder.
2 Determine the point on the Roll paper at which you want the near end detector to be triggered. Then measure the distance A shown in the illustration.



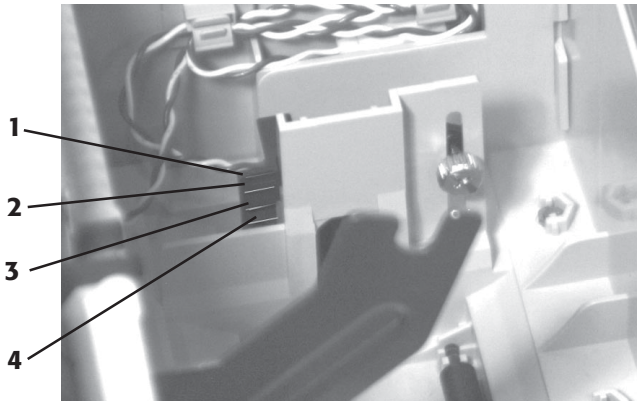
Note: There may be some difference between the measured distance A and the actual sensing position.

3. Find the corresponding adjustment position number from the table below.

Distance A	Adjustment position number
4 mm (0.16")	#1
6 mm (0.24")	#2
8 mm (0.32")	#3
11 mm (0.43")	#4
19 mm (0.75")	#5
26 mm (1.02")	#6

Note: Above values are applicable when the inside diameter at the core of the Roll paper is 10 mm.

4. Loosen the detector screw with a coin or screwdriver.
5. Set the detector scale to the position you determined from the table by moving the detector screw up or down. The numbers #1, #2, #3... are not marked on the detector scale.



6. Secure the detector screw; then replace the rewinder and close the printer cover.

1.5.2 Cut-Sheet Paper (Slip)

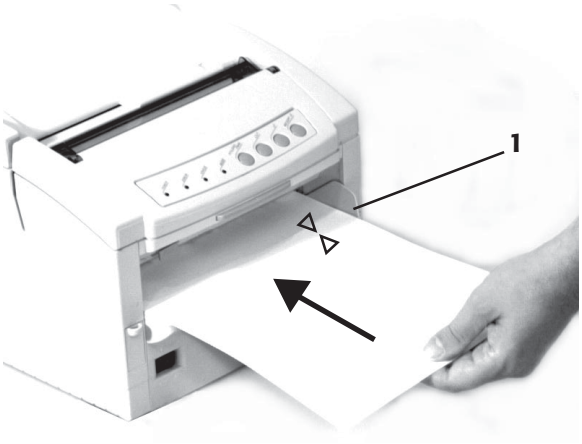
1.5.2.1 Loading the Cut-Sheet Paper (Slip)

Use the paper that matches the specifications.

Note: The printer must be turned on before loading the paper.

1. Turn on the printer.
2. Insert the paper as shown below, while butting the right edge of the paper against the paper guide.

   Note: When using a MICR-version machine, align the marks "▲" and "▼" as shown below and set the paper along the paper guide.



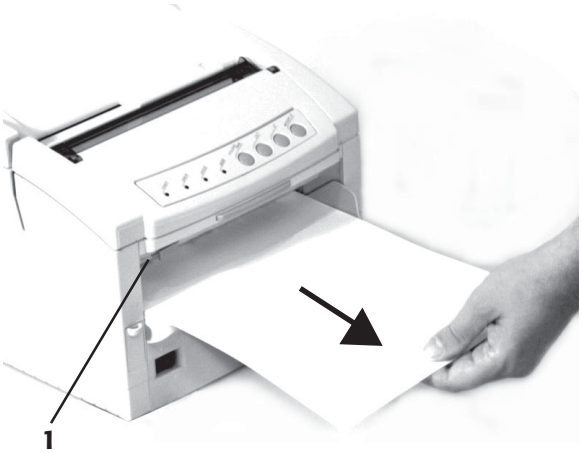
3. Printer feed the paper until the top of form of the paper is reached.

   Note: If cut sheet paper is set askew, remove the paper following the procedure below and reset it:

   1. Pull the lever (1) (marked "PULL").

   2. Pull out the paper in the direction of the arrow.

   3. Reset the paper.



1.5.3 Cut-Sheet Paper (Validation/Stub)

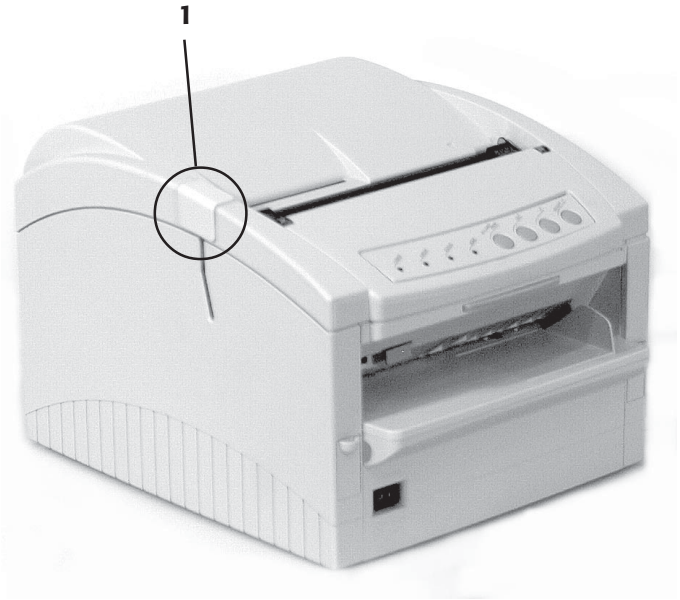
1.5.3.1 Loading the Cut-Sheet Paper (Validation/Stub)

Use the paper that matches the specifications.

Note: ***The printer must be turned on before loading the paper.***

1. Turn on the printer.
2. With the right edge of the paper positioned at the "▼" mark on the Cover Top, insert the paper.

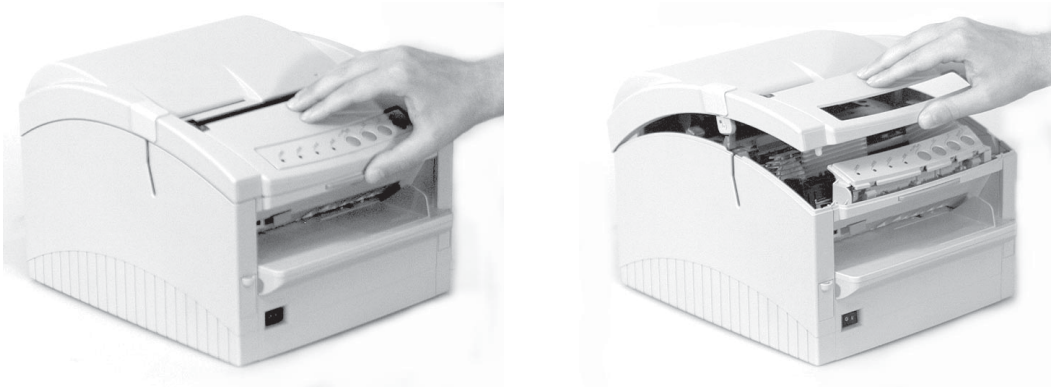
Note: ***To feed paper along the long edge, remove the Piece (1) on the left side of the printer cover and set the paper.***



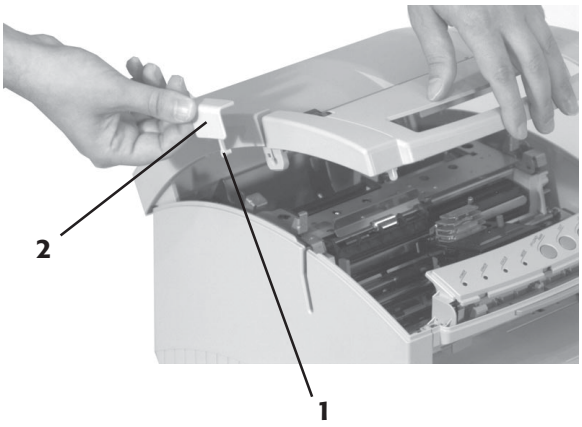
How to remove the Piece

1. Press the Cover Open Bar and open the Printer Cover.

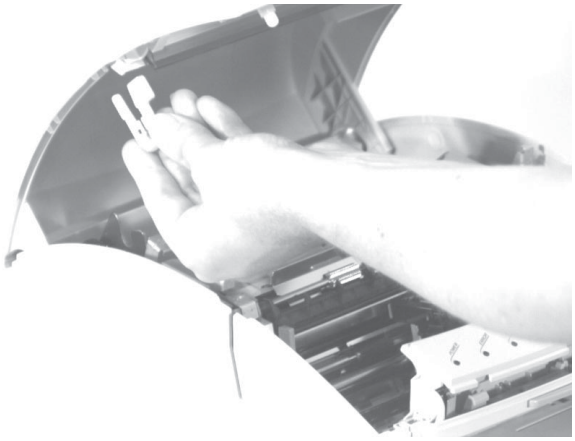
   CAUTION: Printhead may be very hot.



2. Unlock the latch (1) of the Piece Cover B (2) and remove the Piece Cover B.



3. Remove Piece Cover A.



4. Close Printer Cover.
    * Paper has been set for long-edge printing.

    * Store the removed Piece in a safe place so that you will not lose it.

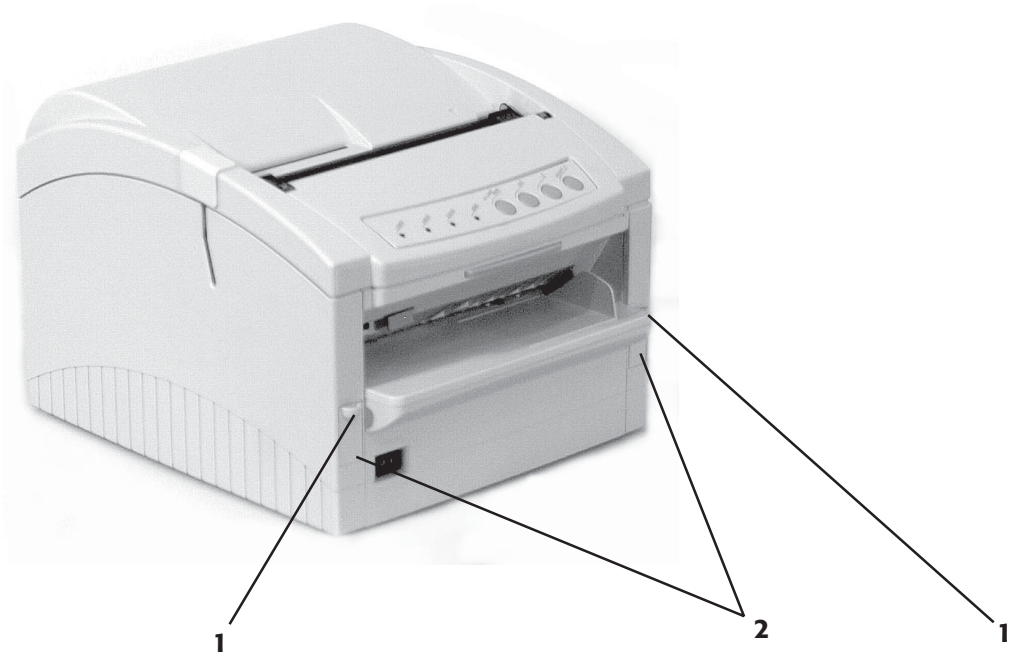
1.5.4 Sprocket Paper (Tractor)

1.5.4.1 Loading the Sprocket Paper (Tractor)

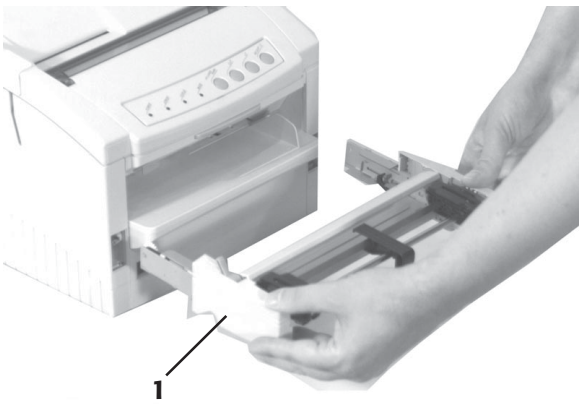
Use the paper that matches the specifications.

Note: The printer must be turned off before inserting the tractor.

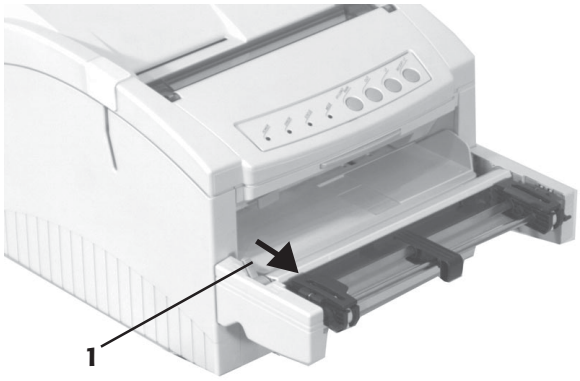
1. Turn off the printer. Move the Paper Guide all the way to the right. Pull the hooks (1) on the tractor cover (2) in the arrow direction and remove the tractor cover.



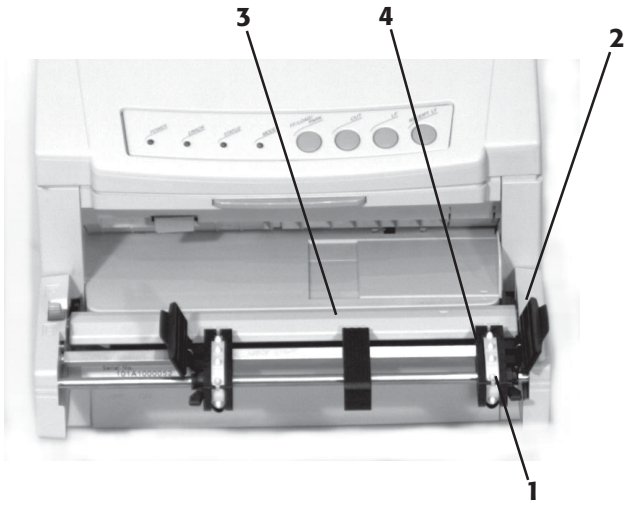
2. Insert the tractor as shown below, and lock the tractor lock lever (1).



3. Set the tractor lever (1) in the direction of the arrow.

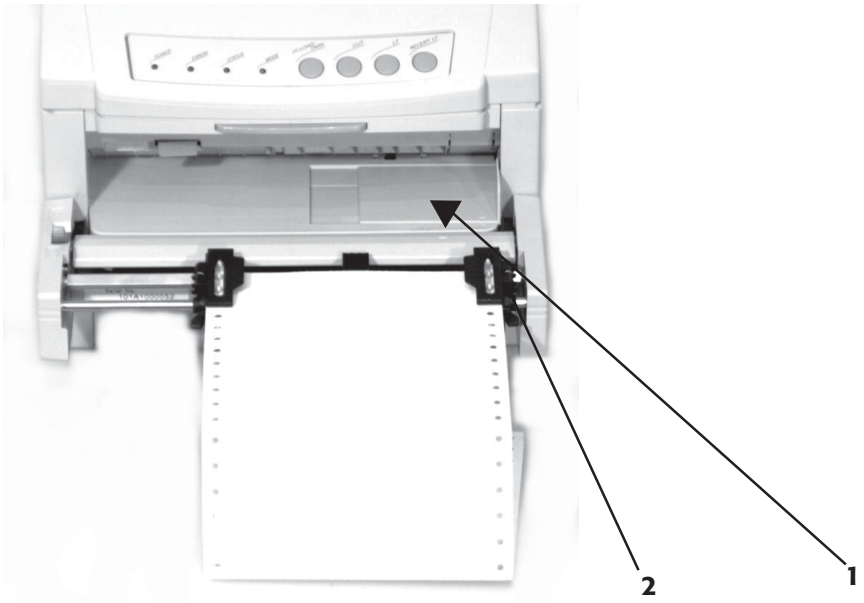


4. Turn on the printer.
5. Pull up on the lock levers (1) and open the tractor covers (2), then move the right tractor over to fit the width of the paper. Center the support (3) between the tractors.



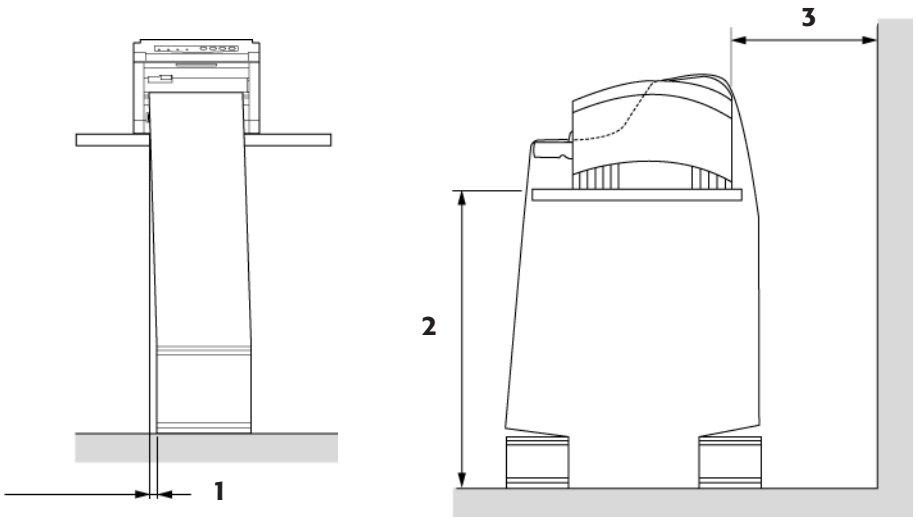
6. Place the first two holes in the paper over the tractor pins (4) on either side and close the tractor covers.

7. Move the left tractor to align the edge of the paper with the appropriate reference mark (!), and push back the right lock lever (2).



8. Fine-tune the position of the right tractor to center the holes in the paper on the pins, and push back the left lock lever (1).

9. Printer feeds the paper into the printer when your computer sends data.
10. Preparation
    1) Position the printer at the front edge of the support (this promotes the unrestricted flow of paper into the printer), then place a stack of Sprocket (Tractor) Paper below the printer.
    2) The standard height of desks on which the printer is installed should be 75cm. Paper should be loaded in parallel with the paper running path wherever possible. The deviation to right and left should be 5cm or less.
    3) The ejected paper should be folded squarely on the floor to enable smooth paper conveyance. Inappropriate paper setting may deteriorate print quality.



1 50mm or less
2 750mm
3 600mm or more

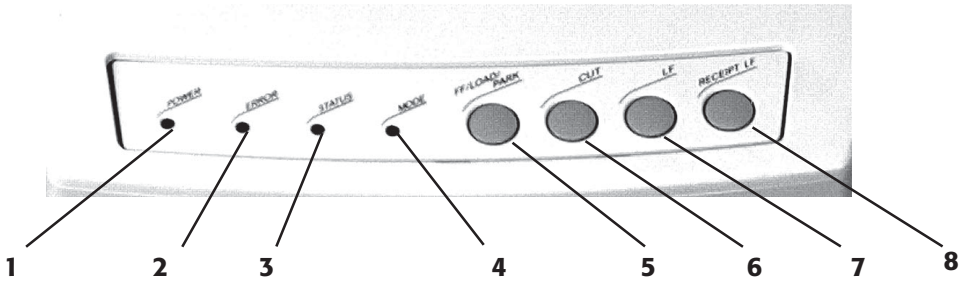
2. Using the Printer

2.1 Operation Panel Functions

Note OEM Fiscal Type:

The operation panel is under the control of the fiscal control PCB. Consequently, the fiscal control PCB should be removed before self tests. Alternatively, disconnecting the cable from the main control PCB is acceptable.

Operation Panel Specification



1	POWER LED	Green
2	LED1	Red
3	LED2	Orange
4	LED3	Orange
	LED4	Green
5	SW2	
6	SW3	
7	SW1	
8	SW4	

Operation Panel

2.1.1 Switching Functions

No.	Switch	Function in Modes other than Tractor	Function in Tractor Mode
1	SW2 (FF/LOD,PAK)	In Receipt Mode: Feeds Receipt paper for the specified length (10/6") In Slip Mode: Ejects a fed slip paper In Validation Mode: Disabled *Printing will not be started.	Without paper: Automatic loading With paper: Automatic parking
2	SW3 (CUT)	In Receipt/Slip/Validation Modes: Disabled	At cutting position: Reverse – feed to the printing position At printing position: Feed to the cutting position Without paper: Disabled
3	SW1 (LF)	In Receipt Mode: Feed a line of Receipt paper In slip mode: Feed a line of a fed Slip paper In Validation mode: Disabled *Printing will not be started.	With a single push: One line feed of Sprocket paper With a continuous push: Page feed *A line is fed immediately after a switch push, and a page after a 500ms continuous push. *Printing will not be started
4	SW4 (Receipt LF)	Feeds a line of Receipt paper *Enabled regardless of media mode and media state.	

* The above switch operations in principle correspond to special commands for switch control.

2.1.2 LED Function

No.	LED		ON	OFF	Blinking	
1	POWER	Green	Powered On	Powered off	-	
2	LED 1 (ERROR)	Red	Recoverable Alarms *Slip Feed/Eject Alarm *Auto Loading Alarm *Auto Parking Alarm *Media Mismatch Alarm (1) *Media Mismatch Alarm (2) *Cover Open Alarm (Only OKI standard type)	Normal state	*Unrecoverable Alarms (blinking pattern indicates alarm type) *See the table in section 4.1 *SP Thermal alarm (LED2 blinks concurrently) *LF Thermal Alarm	
3	LED2 (Status)	Orange	Paper is not fed (In sheet-insertion wait state)	Paper has been fed (in print ready state)	*In sheet-extraction wait state *SP Thermal Alarm (LED1 blinks concurrently)	
4	LED3/ LED4 (Mode)	Orange	In Slip Mode	In Tractor Mode	In Validation mode *Quick blinking	In MICR Mode *Slow blinking
		Green	In Receipt Mode		-	

When “Cover Open Alarm” is set to No in Menu, Cover Open Alarm is disabled (printing does not stop).

* Media Does Not Match Alarm (1) is detected by monitoring the option tractor lever. Media Does Not Match Alarm (2) is detected by the Validation sensor monitoring (media manually inserted into the validation opening).

2.2 Local Functions

Note OEM Fiscal Type :

This section describes local maintenance capabilities under the control of the printer block.

The fiscal control PCB should be removed before the functions are performed.

2.2.1 Types

Local Functions

- Local test
  - All letters & rolling ASCII continuous printing test (Receipt)
  - All letters & rolling ASCII continuous printing test (Slip/Sprocket)
  - Sample data continuous printing test (Validation)
  - MICR read test (Receipt) (only with MICR Type)
  - Rewinder winding-performance evaluation continuous printing test (Receipt)
- Menu function (Receipt)
- Hexadecimal dump (Receipt)
- Platen maintenance mode

2.2.2 Starting

No.	Local Functions	SW2	SW3	SW1	SW4
1	All letters & rolling ASCII continuous printing test (Receipt)	X	X	O	X
2	All letters & rolling ASCII continuous printing test (Slip/Sprocket)	O	X	X	X
3	Sample data continuous printing test (Validation)	X	O	X	X
4	Menu function (Receipt)	O	X	O	X
5	Hexadecimal dump (Receipt)	X	O	O	X
6	MICR read test (Receipt) (Only with MICR type)	O	O	X	X
7	Platen maintenance mode	O	O	O	X
8	Rewinder winding-performance evaluation continuous printing test (Receipt)	X	O	O	O

Notes:

1. ***To make the above modes are active, turn on the printer while pressing the switches marked with a circle and releasing those with a cross.***
2. ***No.2: Sprocket paper printing test is performed when the lever is on the Tractor side, and Slip paper printing test when the lever is not on the Tractor side.***
3. ***No. 3, 6 and 8: if the lever is on the Tractor side, the printer starts up for normal printing with the function disabled.***

   No. 1, 4, 5, and 7: the printer starts up with the function enabled regardless of the lever position.
4. ***No. 1: printing width is as set in the Width of Roll Paper menu.***
5. ***No.1, 2 and 8: printing is suspended by pressing SW1. Pressing SW1 again restarts printing.***
6. ***No. 1-3, 6 and 8: printing is suspended by opening the cover. Close the cover to restart printing.***
7. ***During any local function, lever operation causes media mismatch alarm (1). When the lever is returned to the original position, the alarm is released to restart test printing.***

2.3 Menu Function (Receipt)

Overview

The menu function is the local function that sets each mode to control the printer and adjust it. This mode has the following items, saved in the E2P-ROM. This information is printed only when the menu mode is activated at Power On, and the information can be overwritten from the operator panel.

Menu Print is printed in Receipt Mode.

The menu determines the initialization state of each mode.

2.3.1 OEM — Standard Model

No.	Item	Function	Sets
1	Auto Cutter Unit	Selects Auto Cutter Unit Installed/Not Installed	Yes O No
2	MICR Unit	Selects MICR Unit Installed/Not Installed	Yes (CMC-7) Yes (E-13B) O No
3	Print Registration	Adjusts the print position if it shifts in Forward printing and Reverse printing	0.25mm Right 0.20mm Right 0.15mm Right 0.10mm Right 0.05mm Right O 0 0.05mm Left 0.10mm Left 0.15mm Left 0.20mm Left 0.25mm Left
4	Top Adjust	Adjusts Top of Form position when Slip/Sprocket are used	-1.75mm ~+1.75mm *Can be set in the 0.35mm unit *Default value: 0 mm
5	Cut Adjust	Adjusts Cut Position when cutting Sprocket paper	-1.75mm ~+1.75mm *Can be set in the 0.35mm unit *Default value: 0 mm
6	Width of Roll Paper	Selects the paper width of Roll paper. (Changes the print area)	O 76.2mm 69.5mm

O = default value

Note ***For No. 3, 4, and 5, adjust to the proper values at factory shipment.***

2.3.2 OKI — Standard Model

No.	Item	Function	Sets
1	Auto Cutter Unit	Selects Auto Cutter Unit Installed/Not Installed	Yes O No
2	MICR Unit	Selects MICR Unit Installed/Not Installed	Yes(CMC-7) Yes(E-13B) O No
3	Print Registration	Adjusts the print position if it shifts in Forward printing and Reverse printing	0.25mm Right 0.20mm Right 0.15mm Right 0.10mm Right 0.05mm Right 0 0.05mm Left 0.10mm Left 0.15mm Left 0.20mm Left 0.25mm Left
4	Top Adjust	Adjusts Top Of Form position when Slip/Sprocket are used.	-1.75mm ~ +1.75mm *Can be set in the 0.35mm unit *Default value: 0 mm
5	Cut Adjust	Adjusts Cut Position when cutting sprocket paper.	-1.75mm ~ +1.75mm *Can be set in the 0.35mm unit *Default value: 0 mm
6	Auto LF (Auto line feed)	Selects auto line feed. (Selects auto line feed by CR Code)	Yes O No
7	Receive Buffer Size	Selects Receive Buffer Size	2K O 16K
8	Print Mode	Selects font	O Utility HSD
9	Off-line Busy Control	Selects conditions of BUSY	O Yes (Off-line or receive buffer-full) O No (Receive buffer-full)
10	Cover Open Alarm	Selects enable/disable of print stop in Cover Open	O Yes No
11	Width of Roll Paper	Selects the paper width of Roll paper (Changes the print area)	O 76.2mm 69.5mm
12	Zero Character	Selects a zero font	Slashed O Unslashed
13	Page Length	Selects the paper length of Sprocket paper	88.9mm 139.7mm 215.9mm O 279.4mm 304.8mm
14	Paper End Signal	Selects the paper sensor that enables Paper End Signal. • RNE: Receipt/Journal Near End Sensor • RE: Receipt/Journal End Sensor	O Yes (RNE or RE) Yes (RE) No

O = default value

Note 1) In this model, an auto cutter unit cannot be installed.

Note 2) I/F control information (baud rate, etc.) and customer display connection/disconnection of serial model are set by DIP-SW on the I/F board.

Note 3) MICR Unit selection has the following two types for MICR Read test (Refer to Section 2.6): "Yes (CMC-7)," and "Yes (E-13B)." Normally, either selection is recognized as an actual installation status of MICR Unit, and MICR type is selected by designation of the command.

Note 4) For No. 3, 4, and 5, adjust to the proper values at factory shipment.

2.3.3 How to Operate

Start

To start the Menu Mode, turn the printer on while holding down SW2 + SW1. When the printer's initialization ends correctly, the printer prints the title "Menu Print" and all the menu items and set values. Then, the printer line-feeds until the print result goes beyond the Manual Cutter position, prints the item/set value immediately after "Menu Print," then waits for a switch to be pressed.

Operation

The switch functions during the menu mode are as follows:

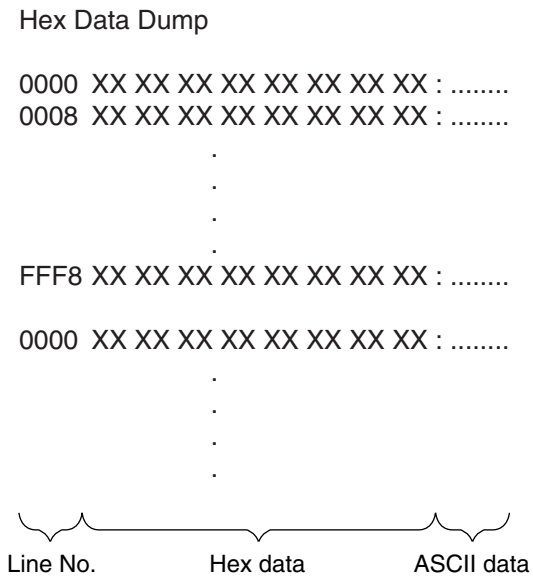
Switch	Function
SW2	Advances the set values of the Menu Item, one at a time. From the last set value, returns to the first set value.
SW3	Ends Menu Mode. Registers the set values in EEPROM, then prints the end message "Menu End" and returns to the same initialized state as at power on.
SW1	Advances the Menu Items, one at a time. From the last Menu Item, returns to the first Menu Item.
SW4	Feeds the receipt, by one line

2.4 Hex Dump Function (Receipt)

This function converts received data, as it is, to character codes, and prints it in the Receipt mode. The printed contents are as follows: Upon receiving one byte, the printer divides it into three characters, High-nibble, Low-nibble and a space. Regarding these as 1 block, the printer prints 8 blocks in one line, then, prints the same data in the character format.

Upon entering the HEX dump mode, the printer prints “Hex Data Dump”. (Title printing)

2.4.1 Print Format


Hex Data Dump
0000 XX XX XX XX XX XX XX XX : .....
0008 XX XX XX XX XX XX XX XX : .....
FFF8 XX XX XX XX XX XX XX XX : .....
0000 XX XX XX XX XX XX XX XX : .....
Line No.
Hex data
ASCII data

2.4.2 How to Print

1 If it does not receive data after 150ms have passed since receiving last data, the printer starts printing (CR) if it has some data.

(If there is not enough data to form 8 blocks, spaces will be used.)

If it subsequently receives data, the printer prints from a position next to the position at which the printing started.

2 If it receives the I-PRIME signal (Parallel model)/Reset signal (Serial model), the printer starts printing if it has some data, then feeds one line. Then, the printer is initialized. (If it does not have any data, the printer feeds one line and then is initialized.) After the initialization, the printer starts up in dump mode again and prints. The line number is reset, however, and counting begins from “0000”.

* When I-PRIME signal (Parallel model)/Reset signal (Serial model) is hard reset (setting by Short Plug with Parallel I/F board and by DIP SW with Serial I/F board), it immediately starts initialization and does not continue hex dump.

3 One line-feed is added for every 16 lines.

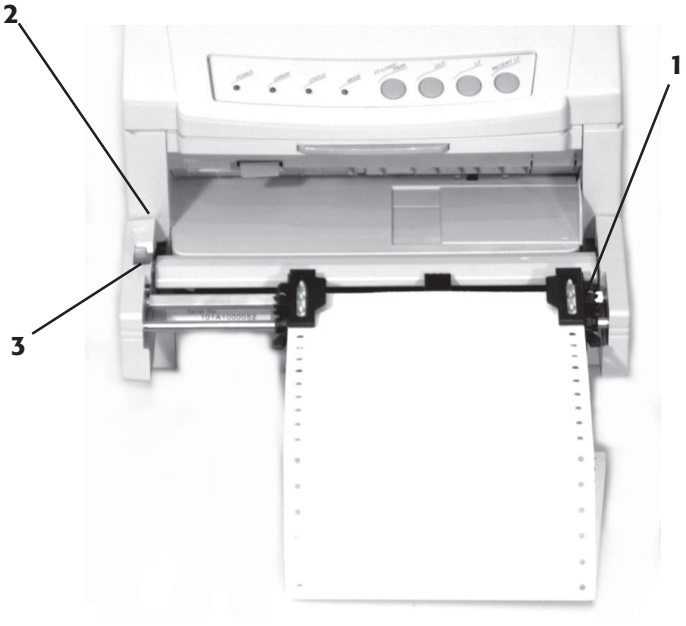
4 The count begins from “0000” when the line number exceeds “FFF8.”

2.5 Using the MICR Reader (Option)

If your printer has the factory installed optional MICR (Magnetic Ink Character Recognition) reader that enables the printer to read and process MICR characters on personal checks, read this section.

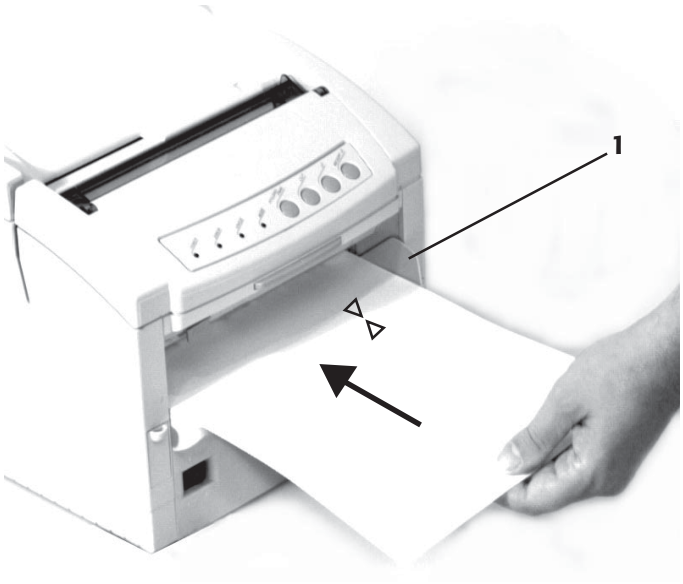
Note 1: If Cut-sheet Paper or Sprocket Paper has been loaded, eject it before you use the MICR feature. This does not apply to the Roll Paper.

Note 2: When the Tractor (Option) (1) has been installed, remove or park the Sprocket Paper, then switch the Lever to the Cut Sheet side (1) from the Sprocket side (3)



Note 3: When using a MICR-version machine, align the marks "▲" and "▼" as shown and set the paper along the paper guide (1).

Note 4: Use a flat Check Sheet. If you use Check Sheets that are dog-eared, have wrinkles, or are wavy, they are more likely to cause a paper jam, scan failure, or damage to the MICR Head.



How to use the MICR Reader

1. Send the command “FS a 0 n” from the host computer. Then the printer shifts to the MICR Mode and waits for the Check Sheet to be inserted. LED3 blinks slowly in orange (repeats 1 sec ON, 1 sec OFF).
2. Insert the Check Sheet with its magnetic ink print surface up and the magnetic ink print area to the right side of the direction of insertion, butting it against the right side of the printer. The printer feeds the Check Sheet and reads at the same time.
3. To print on the Check Sheet, send the command “FS a 1” which feeds the Check Sheet to the print start position, then send the print command.
4. To eject the Check Sheet, send the command “FS a 2.”
5. To have the Check Sheet read results sent again, send the command “FS b.”

2.6 MICR Read Test (Receipt)

This function performs MICR read and prints that result on the receipt paper.

Effective only when the MICR unit is installed and “MICR Unit = Yes(CMC-7)” or “MICR Unit = Yes(E-13B)” is set in the menu.

(1) How to start

Turn the power on while holding down SW2 + SW3.

(2) How to exit

Turn the power off.

(3) Contents of the test

(a) When this mode is started, the printer enters Wait for MICR Insertion state.

(b) Insert MICR card and perform MICR read.

(c) The printer prints MICR read results on the Receipt paper, and enters Wait for MICR Insertion state.

(b) and (c) above are repeated.

(4) Contents printed

When Read is OK:

(a) Prints “Read OK.”

(b) Prints the MICR read results in HEX dump.
(“XX XX ..... XX” + ASCII: 1 line contains 8 byte information)

When Read is NG:

(a) Prints “Read NG.”

(b) Prints the MICR read results (Return Code (1 byte) and read data) in HEX dump.
(“XX XX ..... XX” + ASCII: 1 line contains 8 byte information)

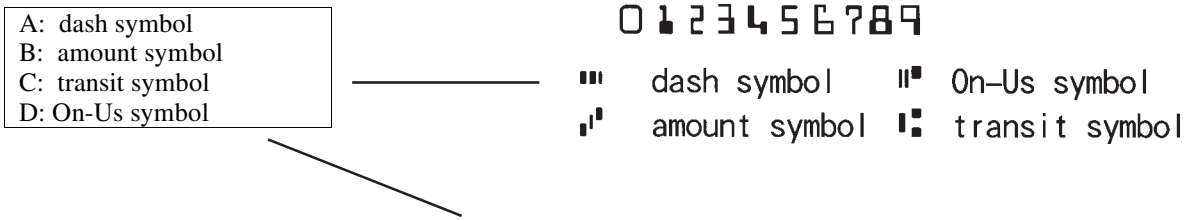
- Regarding MICR Read result, Return Code (1 byte) and Read Data are printed.
  When the Return Code is 30H (“No errors”), it is assumed as “Read OK.” Otherwise, it is assumed as “Read NG.”
- Return codes are shown below:

Return code	**Status**
30H (0)	No errors.
33H (3)	Error: Read/Decode error.
34H (4)	Error: No magnetic ink detected.
36H (6)	Error: Document jam or document is too long.

- When character set is CMC-7, the below codes are returned.

Character	Code	Character	Code	Character	Code	Character	Code
1	31H	2	32H	3	33H	4	34H
5	35H	6	36H	7	37H	8	38H
9	39H	0	30H	(space)	20H	A	41H
B	42H	C	43H	D	44H	E	45H

- When character set is E-13B, the below codes are returned.



Character	Code	Character	Code	Character	Code	Character	Code
1	31H	2	32H	3	33H	4	34H
5	35H	6	36H	7	37H	8	38H
9	39H	0	30H	(space)	20H	-	-
A	41H	B	42H	C	43H	D	44H

Note ***In both cases of CMC-7 and E-13B, special character codes are different from those sent to host by a check paper read command.***

2.7 Rewinder Winding Evaluation Continuous Print Test (Receipt)

This function performs print/platen switch continuous test to evaluate the rewinder winding performance.

(1) How to start

Turn the power on while holding down SW3 + SW1 + SW4.

(2) How to exit

Turn the power off.

- During test printing, if you press SW1, printing suspends. If you press SW1 again, printing resumes.

(3) Contents printed

(a) Prints “HHH”+ Space + “HHH” (UTL characters)

(b) Print Sheet Mode switching (Receipt → Slip → Receipt)

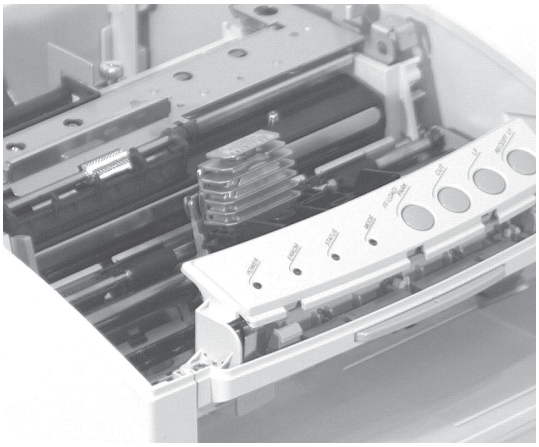
3. Maintenance

3.1 Replacing the Ribbon Cartridge

When printing becomes light, replace the Ribbon Cartridge, following the procedure shown below:

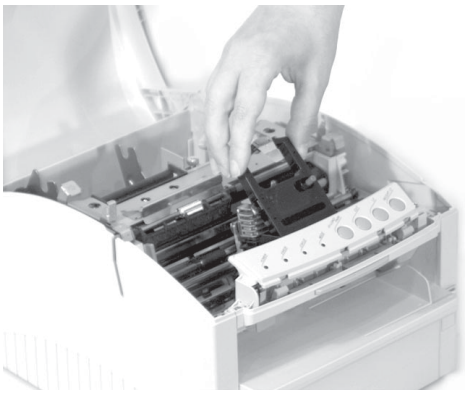
1. Make sure the printer is turned OFF.
2. Press the Cover open bar and open the printer cover.

3. Center the printhead.



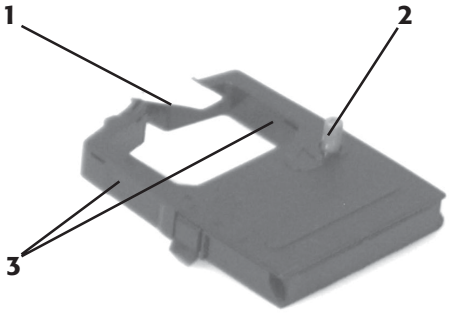
4. Swing the front of the cartridge up off the printhead, then lift the cartridge out and discard it.

Caution! The printhead may be HOT!



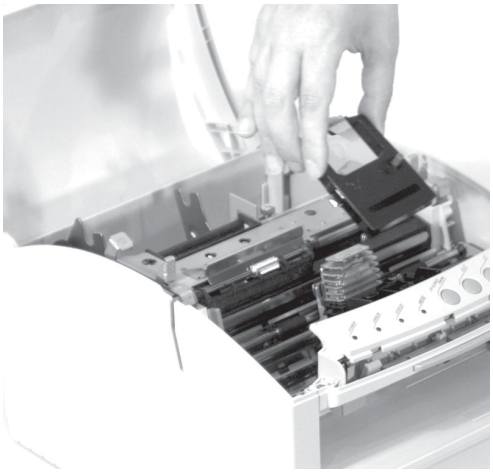
5. Unpack the ribbon cartridge.

Important! Do NOT remove the ribbon shield (1) from the ribbon!



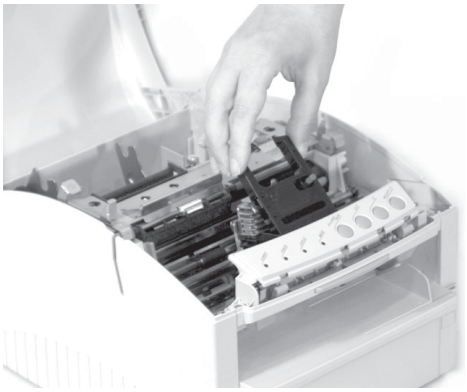
1 Ribbon Shield
2 Take-up Knob
3 Grip Points

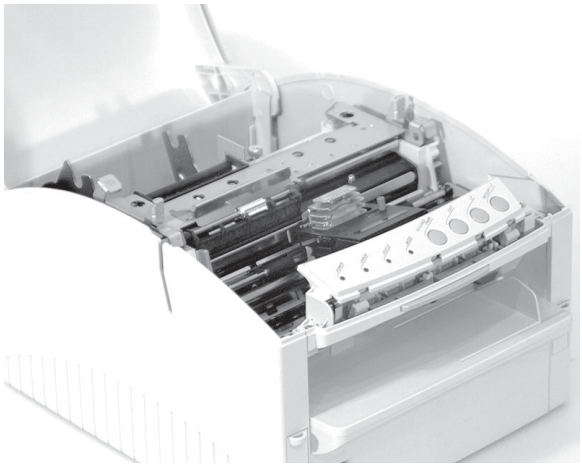
6. Install the new ribbon cartridge.
   1) Hold the ribbon cartridge as shown below.



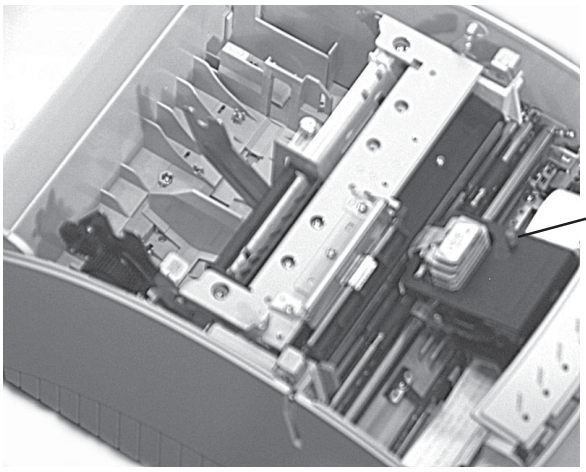
   2) Fit the grooves in the flat end of the cartridge over the posts on the ribbon plate.

3) Lower the front of the cartridge over the printhead until it snaps into place.





4) Turn the knob (1) in the direction of the arrow on the cartridge to take up the ribbon slack.



3.2 Replacing the Roll Paper

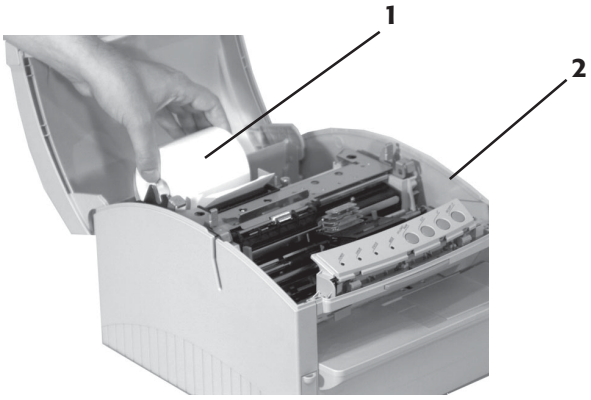
When the Roll is used up, load a new one, following the procedure shown below.

1. Press Form Feed switch (1) and eject all the Receipt Paper (2).

2. Press the Cover Open Bar and open the Printer Cover.

   **** Caution! The printhead may be HOT!***

3. Remove the paper roll on the rewinder, following the procedure below.
   (1) Remove the rewinder (1) from the printer (2).



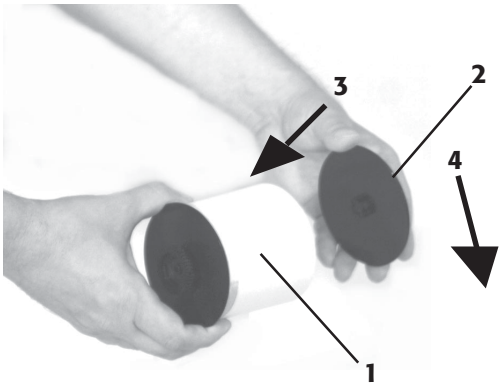
   (2) Rotate the flange (2) in the direction shown below and remove it from the rewinder (1).

Note 1: Rotation direction of the flange varies depending on the width of the Roll Paper.

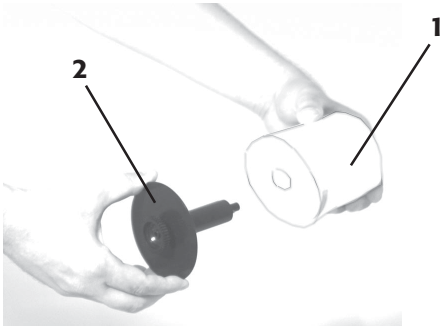
Arrow 3: Wide Roll Paper (Width: 76.2 mm)

Arrow 4: Narrow Roll Paper (Width: 69.5 mm)

Note 2: When a spacer is installed, remove the spacer along with the flange.



   (3) Pull the Roll Paper (1) out from the rewinder (2). When it is tight, rotate the rewinder in the direction below, and pull out the paper.



4. Load new paper roll.
   For loading Roll Paper, refer to Section 1.5.1.2.

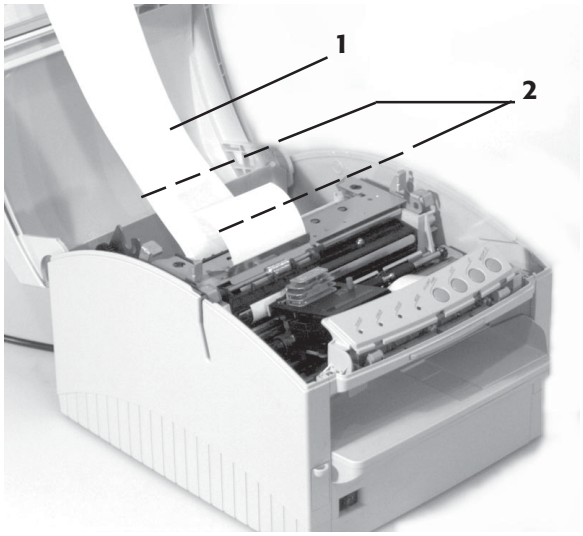
3.3 Clearing Paper Jams

When Roll Paper gets jammed, remove the paper, following the procedure shown below:

1. Press Cover Open Bar and open the printer cover.

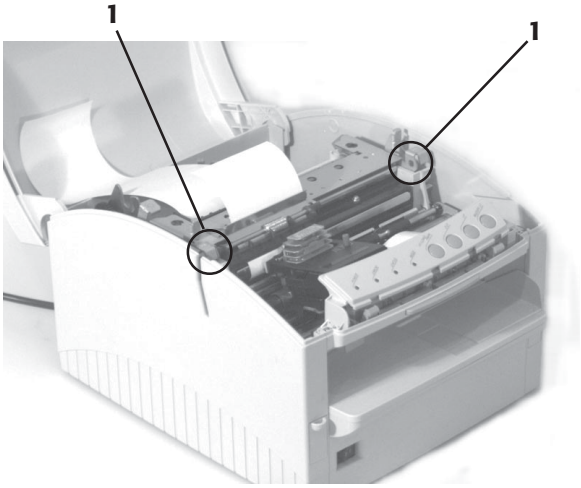
   * ***Print head may be very hot. Exercise caution.***

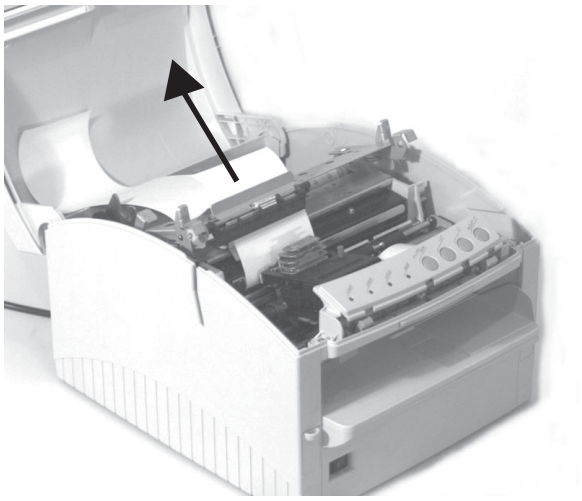
2. Remove the rewinder and cut the Roll Paper (1) at the location (2) shown below.



3. Press the two levers (1) on either side at the same time as shown, lift the plate assembly and gently pull out the jammed paper in the direction of the arrow.

Note: Be careful not to leave small pieces of paper.

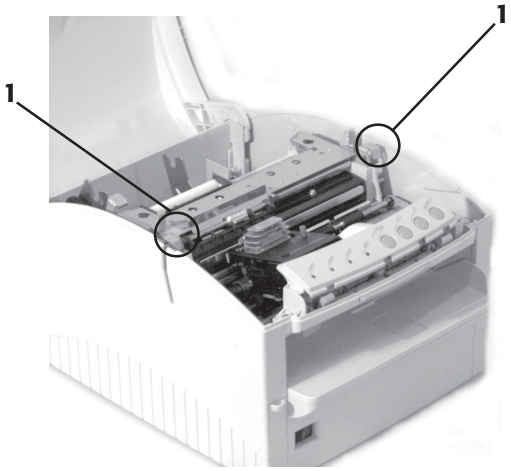




4. Load a new paper roll.

   For the procedure to load Roll Paper, refer to Section 1.5.2.

Note: Before loading Roll Paper, press down on the two levers (1) to close the plate assembly securely.



Cut-Sheet Paper

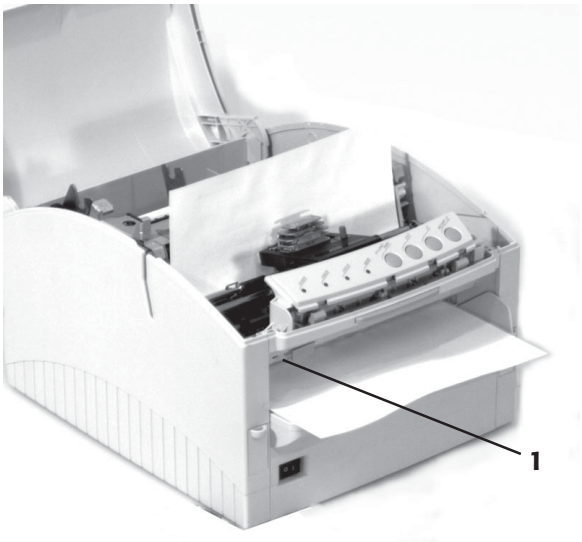
When cut-sheet paper gets jammed, remove the paper, following the procedure shown below:

1. Press the Cover Open Bar and open the printer cover

   **** Print head may be hot. Exercise caution.***

2. Slowly pull out the paper upward or toward you while pulling the lever (1) [marked "PULL"] toward you.

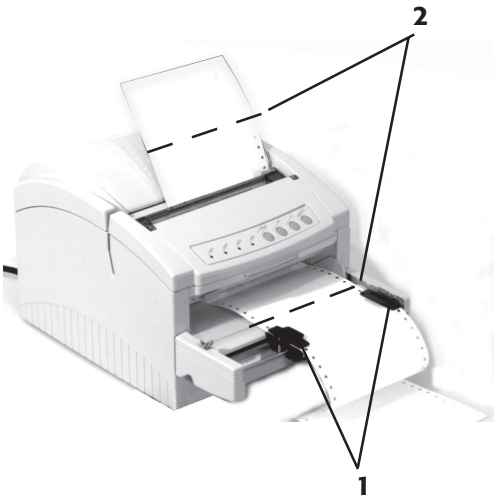
   Note: Be careful not to leave small pieces of paper behind.



Sprocket Paper

When sprocket paper gets jammed, remove the paper, following the procedure shown below.

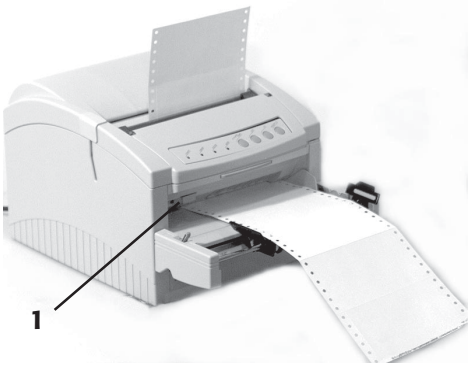
1. Open the Tractor Cover (1) and cut the sprocket paper at the perforation (2).



2. Press the Cover Open Bar and open the printer cover

3. Slowly pull out the paper upward or toward you while pulling the lever (1) [marked “PULL”] toward you.

   Note: Be careful not to leave small pieces of paper behind.



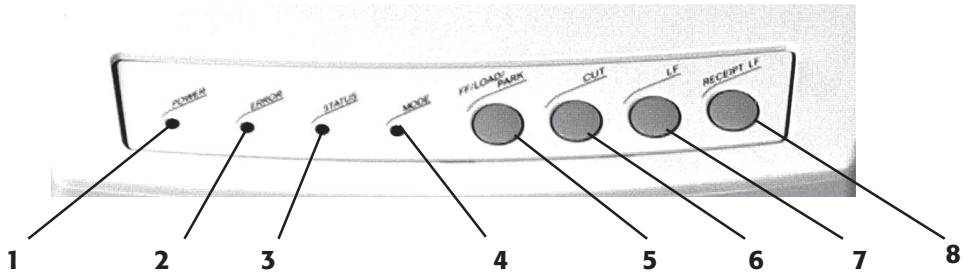
4. Troubleshooting and Repair

4.1 Alarm Indication for a Failure

When a failure occurs, the printer indicates its contents with LED1 lamp on the operation panel, which blinks in different ways depending on the failure type.

Note: ***OEM Fiscal Type:***

The alarm indication works only when the Fiscal Control PCB is not mounted.

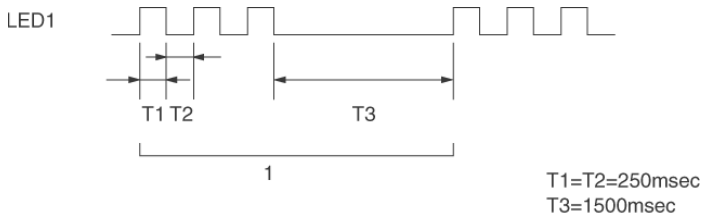


1	POWER LED	Green
2	LED1	Red
3	LED2	Orange
4	LED3	Orange
	LED4	Green
5	SW2	
6	SW3	
7	SW1	
8	SW4	

Operation Panel

4.1.1 Details of Alarm Indications

No. of times LED 1 blinks	Malfunction contents	What you should do
1	Program ROM Alarm	Contact the store where you bought the printer or the Maintenance Service Center
2	EEPROM Alarm	
3	Internal RAM Alarm	
4	External RAM Alarm	
5	Homing Alarm	Is the media jammed? → If it is, remove the jammed paper. Is the ribbon snagged? → Replace the ribbon. If the above do not apply to your case, contact the store where you bought the printer or the Maintenance Service Center
6	Spacing Alarm	
8	Platen Switching Alarm	Is the media jammed? → If it is, remove the jammed paper. If this is not the case, contact the store where you bought the printer or Maintenance Service Center
9	Head A/D Error	Contact the store where you bought the printer or Maintenance Service Center
10	WDT (F/T Control)	
11	NMI (F/W Control)	
12	BRK (F/W Control)	
13	MICR Unit Error (only with MICR type)	Although the MICR Option is not installed in your printer, is the No. 2 MICR Unit setting in the Menu "Yes?" (On how to check the Menu Settings, refer to Section 2.3, "Menu Function." → If it is, change it to "No." If this is not the case, contact the store where you bought the printer or Maintenance Service Center
14	Interface PCB Error (only OKI standard type)	Is I/F board (option) installed correctly? → If not, install it correctly. Isn't I/F board (option) defective? → If it is, replace the I/F board. If the above do not apply to your case, contact the store where you bought the printer or Maintenance Service Center



1 One Cycle

4.1.2 LED Indication

No.	LED		ON	BLINK
1	LED 1 (ERROR)	Red	[Recoverable Alarms] Slip Load Alarm → Slip paper was not loaded correctly. Remove it and reload it. Slip Exit Alarm → Slip paper did not exit correctly. Remove the Slip paper. Auto Loading Alarm → Sprocket paper was not loaded correctly. Set it at the correct position of the Tractor and do the loading operation again. Auto Parking Alarm → Sprocket paper did not eject correctly. Do the parking operation again. If the paper does not move through the Tractor Gear turns, remove it manually. Media Mismatch Alarm → Media different from the one the printer is trying to print on has been set. Change the print mode or set the correct media. Cover Open Alarm → Close the printer cover.	Fatal Alarm (see Section 4.1.1) SP Thermal Alarm (blinks simultaneously with LED2) → The print head area has become hot. As soon as the temperature goes down, the printer recovers automatically. LF Thermal Alarm → The LF Motor has become hot. As soon as the temperature goes down, the printer recovers automatically.
2	LED 2 (STATUS)	Orange	Media has not been loaded (Waiting for loading) state. → Load the media.	Waiting for Media to be removed. → Remove the media. SP Thermal Alarm (blinks simultaneously with LED1) → The print head area has become hot. As soon as the temperature goes down, the printer recovers automatically.

5. Specifications

5.1 Introduction

5.1.1 Scope of Application

This specification applies to OKIPOS 425S/425S/425SF, a 9-pin type serial dot impact printer.

This device is a desk-top serial dot impact printer, used exclusively as the output device for POS (Point-of-sales) system.

- OKIPOS 425S: OKI Single Standard Version
- 425S: OEM Single Standard Version
- 425SF: OEM Single Fiscal Version

5.1.2 Characteristics

Printhead with 9 pins mounted

Direct access control panel

Printhead Life:	200 million characters (Ave.) - Utility Print Quality	
Print speed:	387 cps (19.3 ips):	HSD (High-Speed Draft)
	317 cps (19.3 ips):	Utility
Paper feed:	Rear:	Roll Paper
	Top:	Counterfoil / Validation
	Front:	Cut-Sheet Paper/Sprocket Paper (Tractor)
Paper handling:	Auto Loading	
Paper copies:	Cut-Sheet Paper:	Total 5 pages (original 1 + 4 copies)
	Sprocket Paper (Tractor):	Total 4 pages (original 1 + 3 copies)
Emulation:	OEM Fiscal Type:	OKI Epson Emulation + New Defined Command to support OEM fiscal command
	OEM Standard Type:	OKI Epson Emulation
	OKI Standard Type:	OKI Epson Emulation (ESC/POS similar)
Interface:	IEEE-1284 bidirectional parallel or RS-232C Interface	
Line Feed Increments:	OEM Fiscal/OEM Standard Type:	1/6", n/216" ($0 \leq n \leq 255$)
	OKI Standard Type:	1/6", n/144" ($0 \leq n \leq 255$)

Agency approved by UL, CSA, CE and FCC

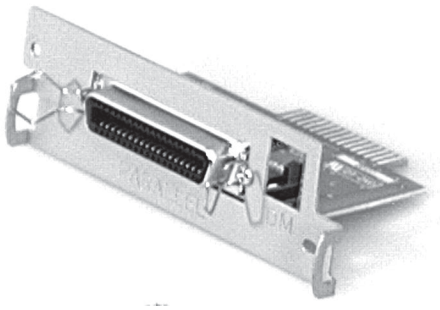
Variations:
- OEM Fiscal Version
- OEM Fiscal + MICR Version
- OEM Standard Version
- OEM Standard + MICR Version
- OKI Standard Version
- OKI Standard + MICR Version

(MICR: Magnetic-Ink-Character-Recognition)

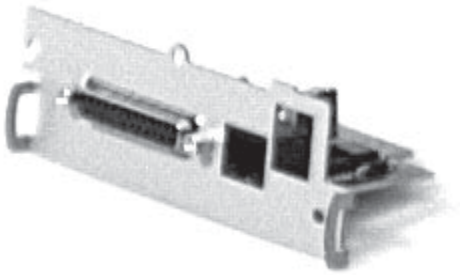
Options

1 Front Tractor: User Option

2 Parallel Interface: Dealer Option (OKI/OEM Standard Type)



3 RS-232C Interface: Dealer Option (OKI Standard Type)

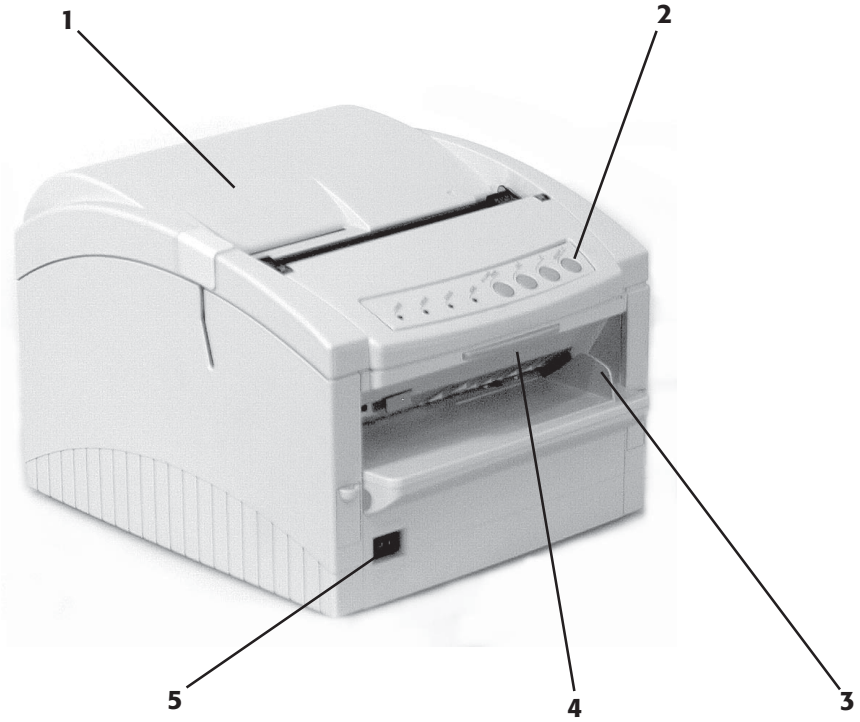


Note ***Only one interface option can be installed.***

5.1.3 Configuration

Standard Printer Configuration

1 Printer Cover
2 Control Panel
3 Paper Guide
4 Cover Open Bar
5 ON/OFF Switch



5.2 General Specifications

5.2.1 Power Requirements

1 Input power

Single-phase AC

Voltage: Universal 120VAC±15% – 230VAC±15%

Frequency: 50/60Hz ±2%

2 Power consumption (without Fiscal Control PCB)

Local Test : Max. 40W (Local Printing)

Idle: Max. 15W

5.2.2 Environmental Conditions

1 Ambient temperature and relative humidity

Operating	Non-operating	Unit	
Temperature	41 to 104	32 to 109.4	°F
	(5 to 40)	(0 to 43)	(°C)
Relative Humidity	20 to 80	10 to 90	%RH

Avoid condensation at all times.

5.2.3 Agency Approvals

UL:	UL 1950
CSA:	CSA C22.2 N0.950
CE:	EN 50081-1: 1992 (EN55022 class B)
	EN 50082-1: 1992
	EN 60950
FCC:	class A

5.3 Communication Interface Specifications

5.3.1 Parallel Interface (OKI/OEM Standard Type)

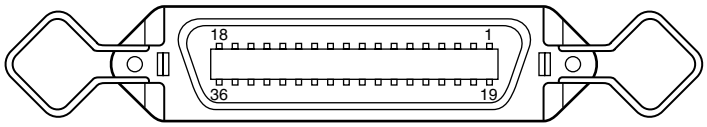
1 Interface Spec (Between centronics connector and host PC)

Parallel interface signal part (IEEE-1284 parallel equivalent)

Centronics Connector Pin Assignment signal

Pin No.	Signal Name	Direction	Function
1	nStrobe	From host PC	Data Strobe
2-9	DATA bit 1~8	From host PC	Data from host PC
10	nAck	To host PC	Receive completion
11	Busy	To host PC	Data receiving impossible
12	PError	To host PC	OEM Standard Type: Error
			OKI Standard Type: Paper End
13	Select	To host PC	Online
14	nAutoFd	From host PC	1284 mode move request
15	NC	-	Not connected
16,19-30, 33	GND	-	Signal ground
17	FG	-	Frame ground
18,35	+5V	To host PC	+5VDC power supply (Max 400mA)
31	nInit	From host PC	Initialization
32	nFault	To host PC	Error
34	DK_STATUS	To host PC	OEM Standard Type: Not used
			OKI Standard Type: Cash Drawer status signal
36	nSelectln	From host PC	1284 mode move request

Note: Pin arrangement

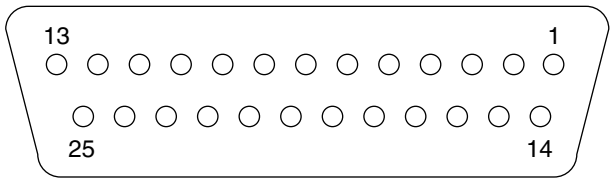


5.3.2 RS-232C Interface (OKI Standard Type)

1 Interface signals

Pin No.	Signal	Code	Signal	Function
1	Protective ground	PG	-	Frame ground
2	Transmitted Data	TD	From printer	Data from printer
3	Received Data	RD	To printer	Data to printer
4	Request to Send	RTS	From printer	Indicates printer cannot receive data in printer and Customer Display Busy/Ready protocol
6 (Note 2)	Data Set Ready	DSR	To printer	Indicates that data can be sent
7	Signal Ground	SG	-	Signal ground
20	Data Terminal Ready	DTR	From Printer	Indicates printer cannot receive data in printer Busy/Ready protocol
5,8 to 10,11, 12 to 19, 21 to 24	-	-	-	Unused
25 (Note 2)	Initial	INIT	To Printer	Requests printer reset

Note 1 Connector pin arrangement



(View from the cable side)

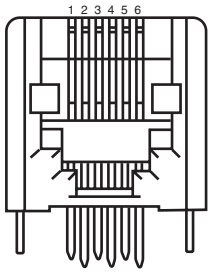
Note 2 The enabled or disabled state of the initial state request signals assigned to pins 6 and 25 is selectable with the DIP SW1-1 and DIP SW1-2.

5.3.3 Cash Drawer connector (OKI Standard Type)

1 Cash Drawer Connector Signals

Pin No.	Signal Name	Direction	Function
1	FG	-	Frame ground
2	CASHDV1	To Cash Drawer	Cash Drawer drive 1
3	CASHST-N	From Cash Drawer	Cash Drawer status signal
4	+24V	To Cash Drawer	+24VDC power supply
5	CASHDV2	To Cash Drawer	Cash Drawer drive 2
6	EL	-	Signal ground

Note: Pin arrangement

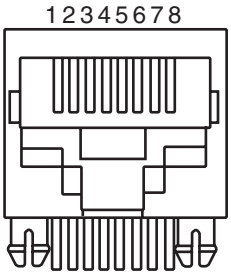


5.3.4 Customer Display connector (OKI Standard RS-232C Interface Type)

1 Customer Display Connector Signals

Pin No.	Signal Name	Direction	Function
1	FG	-	Frame ground
2	NC	-	Not Connected
3	TD	To Customer Display	Data to Customer Display
4	DTR	To Customer Display	+12VDC Power supply
5	DSR	From Customer Display	Indicates that data can be sent
6	EL	-	Signal ground
7	+24V	To Customer Display	+24VDC power supply
8	EP	-	Power ground

Note Pin arrangement



5.4 Physical Characteristics

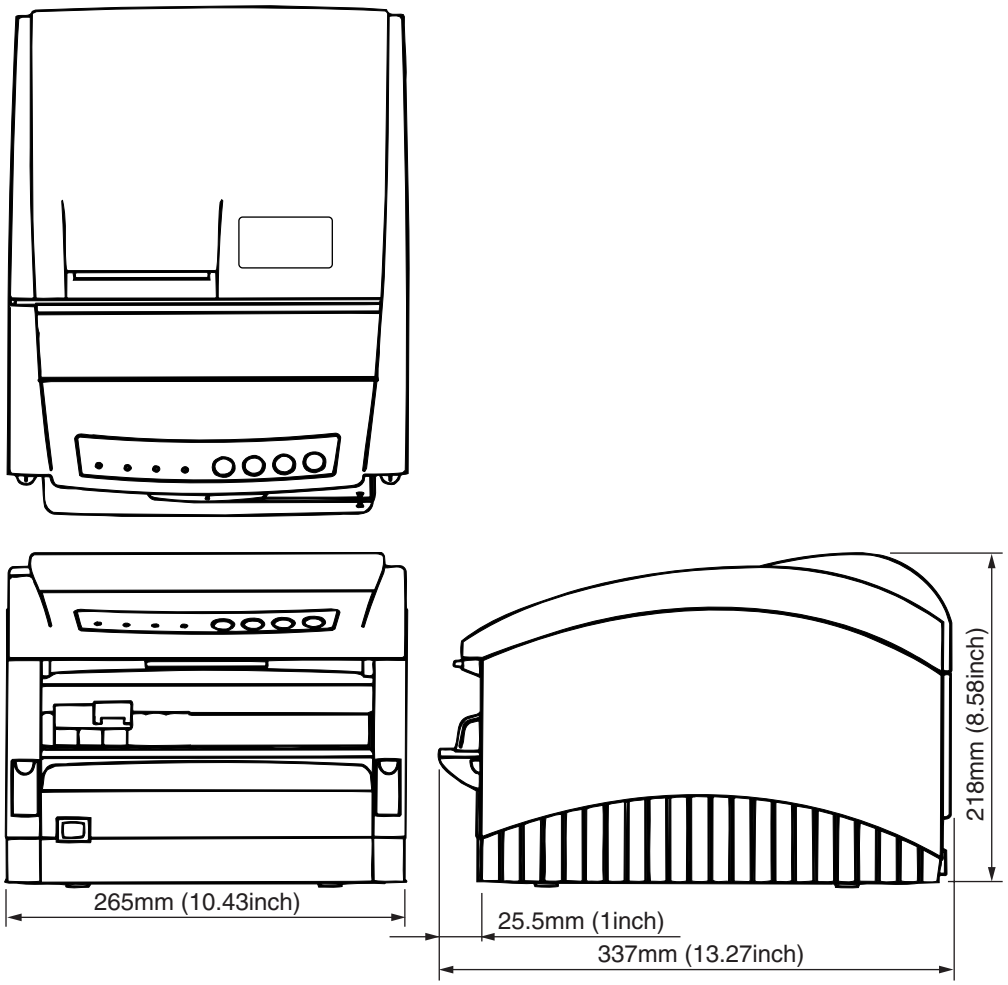
5.4.1 Printhead

Print method:	Impact dot matrix
Number of dot wires:	9 wires
Dot wire diameter:	0.34 mm (0.013")

5.4.2 Printer

1 Outside dimensions (without Tractor)

265 mm (10.43") (W) x 218 mm (8.58") (H) x 337 mm (13.27") (D)



2 Outside dimensions (with Tractor)

265 mm (10.43") (W) x 218 mm (8.58") (H) x 422 mm (16.61") (D)

5.5 Logical Characteristics

5.5.1 Print Direction

Bidirectional, unidirectional printing

Short-line-seeking printing

5.5.2 Selectable Character Pitches

Character width

Selected font	HSD	Utility	HSD (*1)	Utility (*1)
Regular size	20 CPI 0.05 inch 1.27 mm	16.4 CPI 0.061 inch 1.55 mm	26.7 CPI 0.037 inch 0.95 mm	21.8 CPI 0.046 inch 1.17 mm
Double wide size	10 CPI 0.1 inch 2.54 mm	8.2 CPI 0.122 inch 3.10 mm	13.3 CPI 0.075 inch 1.91 mm	10.9 CPI 0.092 inch 2.33mm

(*) OEM Type: Cut Sheet or Sprocket Paper (Tractor) mode only

Character pitch

Item		Contents	
		Normal Size	Condensed size
Number of dots per inch (DPI)		180	240 (*1)
Max. print dot rows	Roll paper	504 (456 *2)	672 (608 *2)
	Cut sheet Paper/Validation	1134	1512 (*1)
	Sprocket paper (Tractor)	1134	1512 (*1)

(*1) OEM Type: Cut Sheet or Sprocket paper (tractor) mode only.
(*2) Apply narrow size roll paper

5.5.3 Maximum Number of Characters per line

Selected font	HSD	Utility	HSD (*1)	Utility (*1)
Regular size	20 CPI	16.4 CPI	26.7 CPI	21.8 CPI
Roll paper	56 (50 *2)	45(41 *2)	74 (67*2)	61 (55 *2)
Cut Sheet/Validation	126	103	168	137
Sprocket paper (Tractor)	126	103	168	137
Double wide size	10 CPI	8.2 CPI	13.3 CPI	10.9 CPI
Roll paper	28 (25 *2)	22 (20 *2)	37 (33 *2)	30 (27 *2)
Cut Sheet/Validation	63	51	84	68
Sprocket paper (tractor)	63	51	84	68

(*1) OEM Type: Select Cut Sheet or Sprocket paper (Tractor) mode only.
(*2) Apply narrow size roll paper.

5.5.4 Font Size/Cell Size

Font type	Font size (H x V)	Cell size (H x V)	CPI
HSD	7 x 7 dots	9 x 9 dots	20 (26.7 *1)
Utility	9 x 7 dots	11 x 9 dots	16.4 (21.8 *1)

(*1) OEM Type is Select Cut Sheet or Sprocket paper (Tractor) mode only. Apply narrow size roll paper.

5.5.5 Line Feed Pitches

6 LPI [4.23 mm (0.167")]

OEM Type: A variable line feed pitch of n/216 inch (integer n: $0 \leq n \leq 255$) can also be specified.

OKI Standard Type: A variable line feed pitch of n/144 inch (integer n: $0 \leq n \leq 255$) can also be specified.

5.6 Printer Performance

5.6.1 Print Speed

1 Regular size

Selected Font	HSD	Utility
Size	20 CPI	16.4 CPI
Print Speed	387 CPS	317 CPS

2 Double wide size

Selected Font	HSD	Utility
Size	10 CPI	8.2 CPI
Print Speed	194 CPS	159 CPS

5.6.2 Line Feed Speed

Feed rate is 114.3 mm (4.5") per second.

5.7 Media Specifications

5.7.1 Cut-Sheet Paper (Slip/Validation)

Paper Width: 105 to 215.9 mm (4.13" to 8.5")
Paper Length: 70 to 297 mm (2.76" to 11.7")
Single part (Slip)
- Weight: 52 to 105 g/m^2 (14 to 28 lb)
- Thickness: 0.065 to 0.13 mm (0.0026" to 0.005")

Single part (Validation)
- Weight: 65 to 81g/m^2 (17 to 21 lb)
- Thickness: 0.08 to 0.1 mm (0.0031" to 0.0039")

Multipart-carbon lined or pressure sensitive
- Weight: 34 to 40g/m^2 (9 to 11 lb)
- Number of copies: Original plus 4 copies
- Thickness: 0.3 mm max. (0.012" max)

Note: All part must be glued at the top. Multipart is slip only.

5.7.2 Cut-Sheet Paper (Counterfoil/Stub)

Paper Width: 70 mm (2.76") or more
Paper Length: 40 mm (1.57") or more
Weight: 65 to 81g/m^2 (17 to 21 lb)
Thickness: 0.08 to 0.1 mm (0.0031" to 0.0039")

Single paper only.

5.7.3 Roll Paper

Paper Width: 69.5 mm / 76.2 mm (2.73" / 3") $\pm$0.5 mm (0.02")
Diameter: 101.6 mm max. (4" max.)
Multipart-pressure sensitive
- Weight: 52 to 81g/m^2 (14 to 21 lb)
- Number of copies: Original plus 1 copy
- Thickness: 0.18 mm max. (0.007"")

Note: The standard paper weight is 57g/m^2 (15 lb) for the first sheet and 45 g/m^2 (12 lb) for the second sheet of multi-part paper.

5.7.4 Sprocket Paper (Tractor)

Paper Width: 76.2 to 215.9 mm (3" to 8.5")
Paper Length: 76.2 to 355.6 mm (3" to 14")
Single part
Weight: 52 to 81g/m^2 (14 to 21 lb)
Thickness: 0.065 to 0.1 mm (0.0026" to 0.0039")
Multipart-carbon lined or pressure sensitive
Weight: 34 to 40g/m^2 (9 to 11 lb)
Number of copies: Original plus 3 copies
Thickness: 0.27 mm max. (0.01" max)
Multipart-interleaf
Weight: 38 to 45g/m^2 (10 to 12 lb) [Carbon: 34g/m^2 (9 lb)]
Number of copies: Original plus 2 copies
Thickness: 0.27 mm max. (0.01" max)

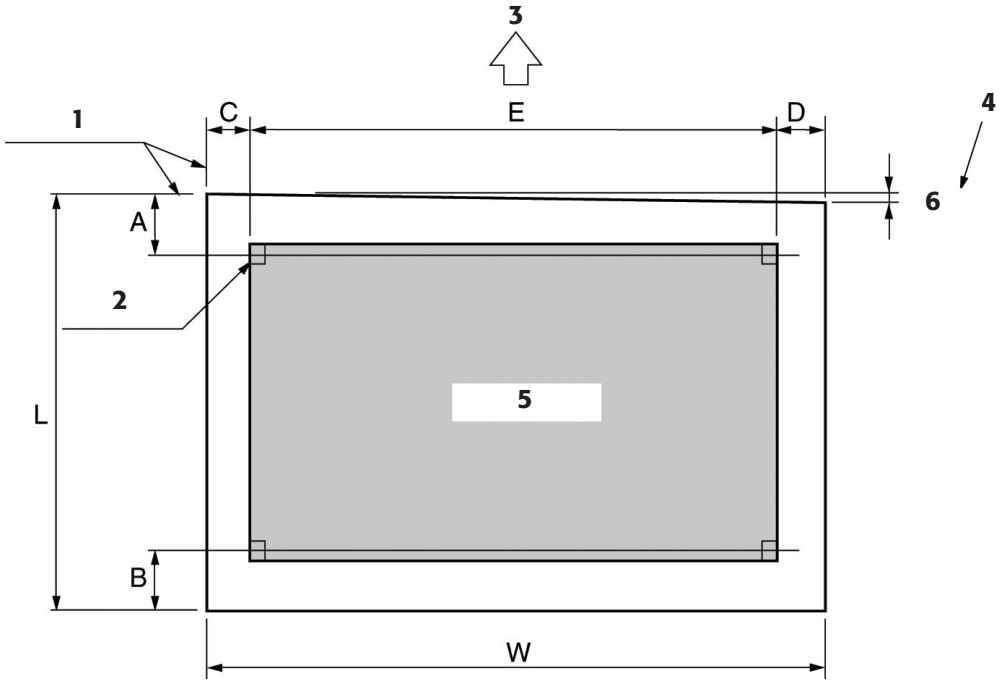
Multiple-part paper should be fastened by spot-pasting or crimpling on both side and should be free of wrinkles.

5.7.5 Appendix: Media Specifications

5.7.5.1. Cut-Sheet Paper (Slip/Validation)

5.7.5.1.1. Paper Size and Printing Area

1 Single-part Paper



1 Base line
2 First character position
3 Paper inserting direction
4 Against the perpendicular to the Base line
5 Printing area
6 ± 0.2mm or less

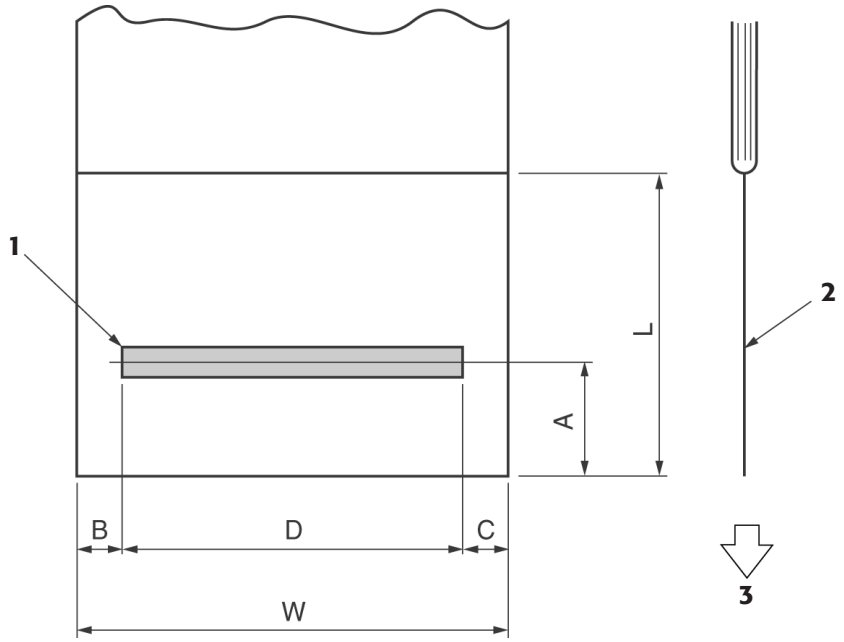
Standard media are in A5 and B5 sizes.

Symbol	Designation	Standard Value
W	Paper width	105~215.9mm (4.13~8.5 inch)
L	Paper length	70~297mm (2.76~11.7 inch)
A	Top margin	6.35mm (1/4 inch)
B	Bottom margin	19.6mm (0.77 inch)
C	Left margin	2.54mm (0.1 inch) or more
D	Right margin	This distance may be adjusted from 2.54 to 27.94 mm (0.1~1.1 inch) by moving the paper guide. D=2.54 mm may be set only for a sheet whose W=190.5mm (7.5 inch) or shorter.
E	Printing area width	Max 160.02mm (6.3 inch)

Note 1 The height-width ratio must be 1: 2/3 – 2.

Note 2 Use a flat sheet free of curls, bends (especially those on its edges), cambers, wrinkles, etc. If a paper is not flat, it may be contaminated with ink due to contact with the ribbon.

2 Counterfoil and Stub



1 Printing area

2 Stub

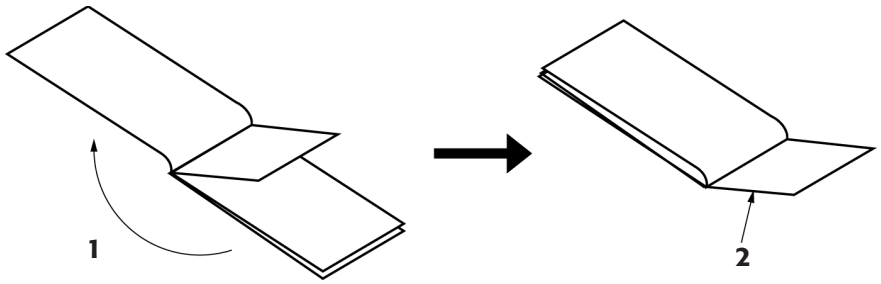
3 Inserting direction

Symbol	Designation	Standard Value
W	Paper width	70mm (2.76 inch) or more
L	Paper length	40mm (1.57 inch) or more
A	Print starting position	18mm (0.7 inch) or less
B	Left margin	2.54mm (0.1 inch) or more
C	Right margin	2.54mm (0.1 inch)
D	Printing area width	Max 160.02mm (6.3 inch)

Note 1 To feed paper, insert a paper from the top side of the device and keep holding it until printing ends.

Note 2 Use a flat sheet free curls, bends (especially those on its edges), cambers, wrinkles, etc. If a sheet is not flat, it may be contaminated with ink due to ink ribbon contact.

Note 3 Before printing on a stub, fold the other sheets backward to make the stub available for print as shown in the fig. below.

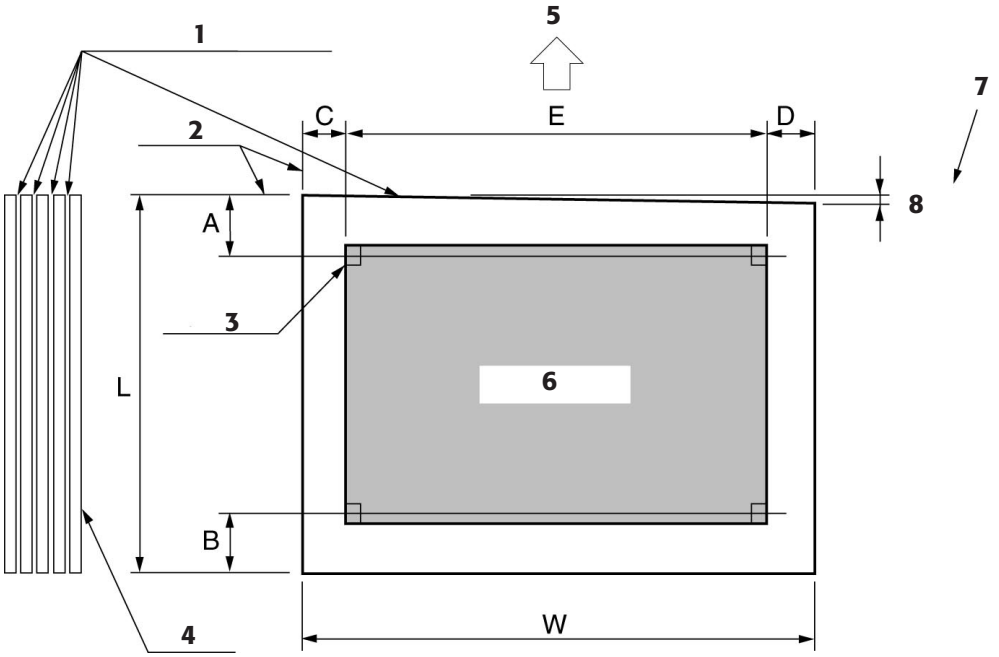


1 Fold backward

2 Stub

3 Multi-part Paper

The standard multi-part paper is the one whose top edge is pasted.



1	Pasted securely (1mm)	5	Paper inserting direction
2	Base line	6	Printing area
3	First character position	7	Against the perpendicular to the Base line
4	Printing surface	8	± 0.2mm or less

Standard media are in A5 and B5 sizes.

Symbol	Designation	Standard Value
W	Paper width	105~215.9mm (4.13~8.5 inch)
L	Paper Length	70~297mm (2.76~11.7 inch)
A	Top margin	6.35mm (1/4 inch)
B	Bottom margin	19.6mm (0.77 inch)
C	Left margin	2.54mm (0.1 inch) or more
D	Right margin	This distance may be adjusted from 2.54 to 27.94mm (0.1~1.1 inch) by moving the paper guide. D=2.54 mm can set only for a sheet whose W=190.5mm (7.5 inch) or shorter
E	Printing area width	Max 160.02mm (6.3 inch)

Note 1 The height-width ratio must be 1 : 2/3 – 2.

Note 2 Use a flat sheet free of curls, bends (especially those on its edges), cambers, wrinkles, etc. If a sheet is not flat, it may be contaminated with ink due to ink ribbon contact.

Note 3 Wide paper with the left or right edge pasted should be printed carefully, since it may twist during feeding.

Note 4 Only a multi-part slip can be used for printing. (Insert it from the front side of the printer.)

5.7.5.1.2 Paper Quality

The paper in the following quality may be used.

Type	Paper Quality
Single-part paper and Stub	High quality paper
Multi-part paper	Pressure-sensitive paper, Carbon-lined paper

1 Paper smoothness must be 90 ~ 7 sec. for Beek and 75 ~ 300 sec. for Sheffield.

2 If you use paper other than that specified, test it to verify that it prints without problems.

5.7.5.1.3 Paper Weight and Maximum Duplicating Quantity

The weight of paper usable for printing and max. duplicating quantity are shown in the table below.

Type	Paper Quality	Weight	Max. Copies	Total Paper Thickness
Single-part paper	High quality paper	52~105 g/m^2 (14~28 lb) ← Slip 65~81 g/m^2 (17~21 lb) ← Validation	-	-
Stub	High quality paper	65~81 g/m^2 (17~21 lb)	-	-
Multi-part Paper	Pressure-sensitive paper, Carbon-lined paper	34~40 g/m^2 (9~11 lb)	5 copies (original + 4 copies)	0.30mm or less

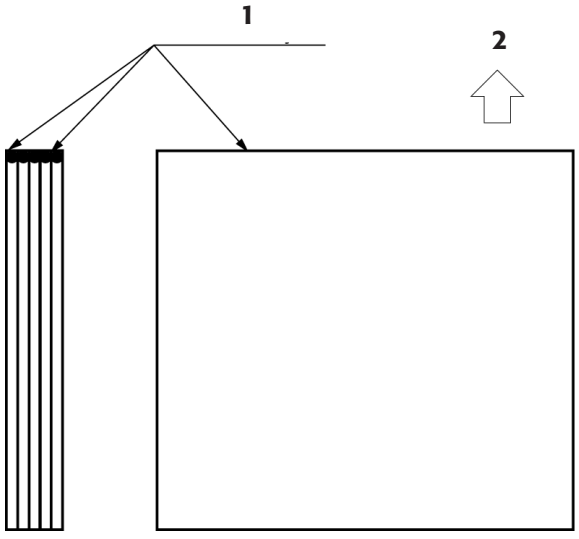
5.7.5.1.4 Fixing Method of Multi-part Paper Joint

1 The multi-part paper joint shall be fixed with 1mm line-pasting on the edge which is first fed into the printer.

2 The joint must be glued securely and pressed without fail to prevent any part from lifting.

3 Paste shall not overflow the paper edge.

4 Any distinct wrinkle must not be observed in the pasting area.



1 Pasted firmly (Width: 1mm)

2 Paper inserting direction

5.7.5.1.5 Binding Holes

Do not use a paper with punched holes. It may invalidate your warranty.

If you choose to use punched paper, be sure to test it thoroughly. Follow these guidelines:

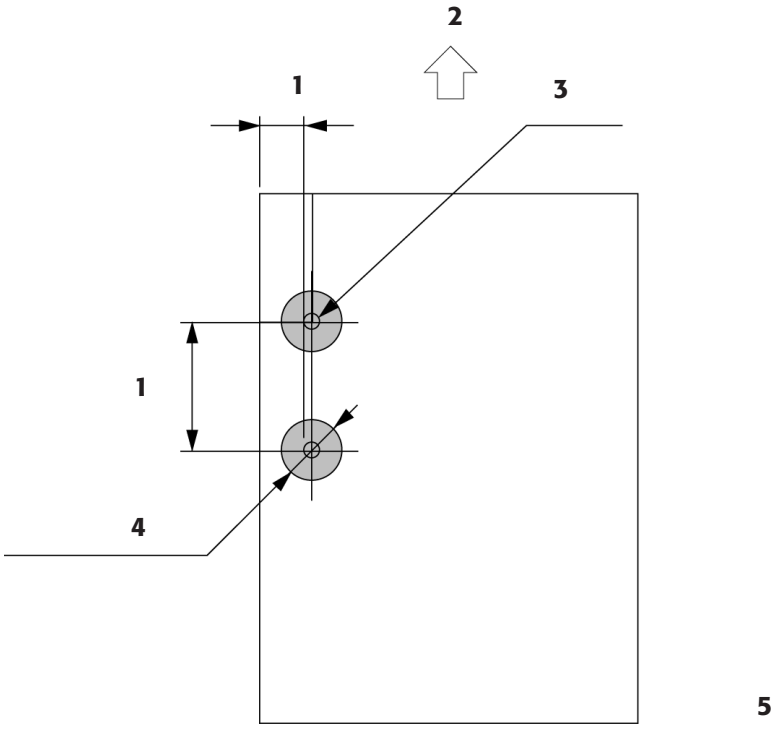
1 Do not print within 5 mm of the hole center.

2 Make sure that paper dust is not left on the paper.

3 If a hole passes over the paper sensor, a false paper end signal may result.

4 Make sure that the edges of holes are even with the paper surface. If they stick up, the printhead may not move smoothly.

5 The positions of holes should be as illustrated in the figure below.



1 10 or more

2 Paper inserting direction

3 ϕ 6 or less

4 ϕ 10 (shaded area) Do not print.

5 Unit: mm

5.7.5.1.6 Perforated Lines

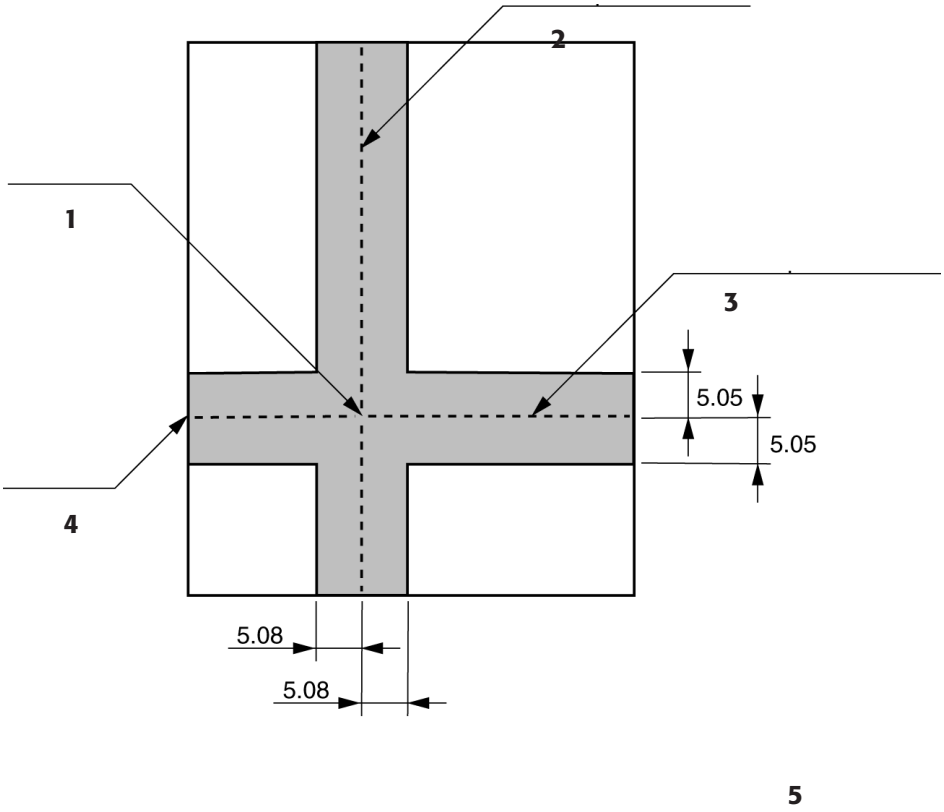
Do not use paper with perforations. It may invalidate your warranty.

If you choose to use perforated paper, be sure to test it thoroughly. Follow these guidelines:

1 The specification of a perforated line corresponds to that of a perforated line on Sprocket Paper.

2 Do not print within the shaded area adjoining the perforations.

3 An example of a perforated sheet is shown in the figure below.



1 Uncrossed

2 Vertical perforated line

3 Horizontal perforated line

4 Uncut 4 places

5 Unit: mm

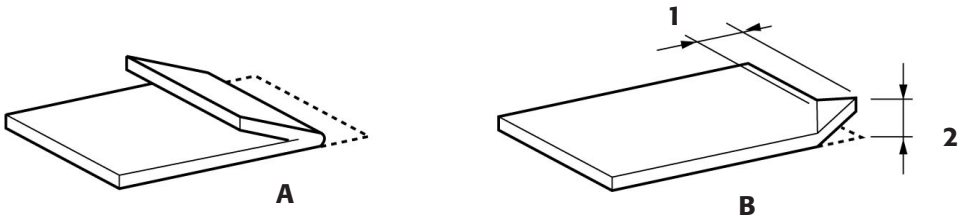
The shaded area indicates the region where printing is prohibited.

5.7.5.1.7 Provisions on Fold, Bend and Curl on Cut-sheet Paper

Paper is apt to sustain bends, cambers or curls resulting from manual handling, carrying, stacking, storing conditions, etc. Therefore, before printing, check and adjust paper in accordance with the provisions below to eliminate paper feed problems.

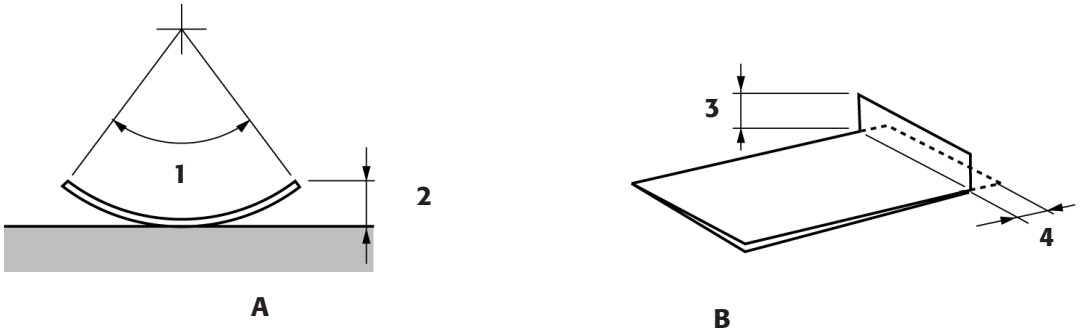
Do not use paper that does not meet the specifications outlined here: it may cause paper feed problems. Problems caused by using non-specified paper are not covered under warranty.

1) Fold
   (a) Do not use a sheet which is folded across its width (A). Even if such paper is smoothed, its strength is still uneven.
   (b) For paper with a folded corner (B), if the fold height after adjustment is 2 mm or less, it may be used for printing.



1 15mm or more
2 Adjusted to make the height 2mm or less

2) Bend and Curl
   (a) If a sheet has a curl height of 2 mm or less (A), it may be used for manual feed printing.
   (b) If a sheet has a bending height of 2 mm or more within 15 mm from the bending line (B), do not use it for printing.

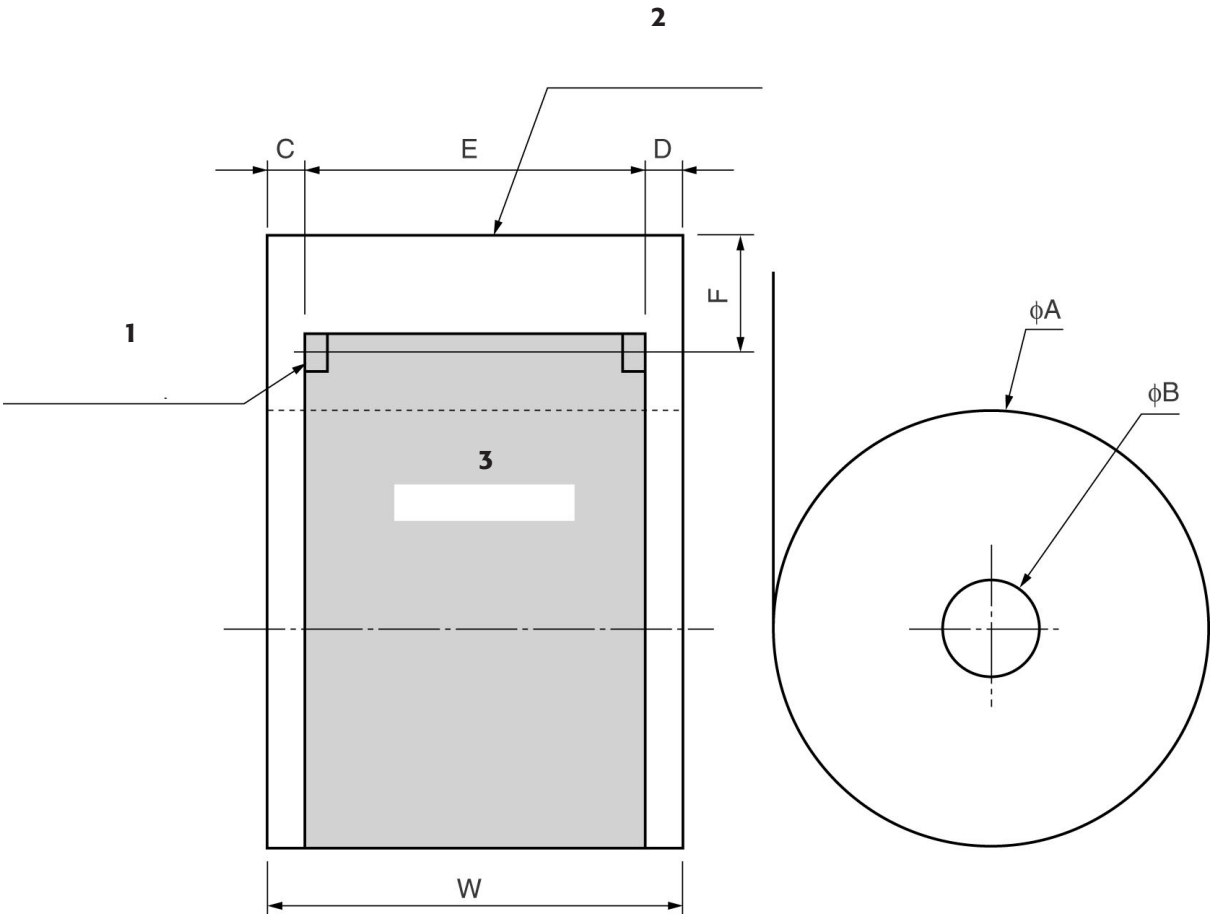


1 Circular arc
2 2mm or less
3 Adjusted to make the height 2mm or less
4 15mm or more

5.7.5.2. Roll paper

5.7.5.2.1 Paper size and Printing area

Multi-part Paper



1 First character position
2 Cutting position (for manual cutting)
3 Printing area

Symbol	Designation	Standard Value
W	Roll paper width	69.5/76.2 mm (2.73/3 inch) ±0.5mm (0.02 inch)
ϕA	Roll paper outside diameter	ϕ101.6mm (4 inch) or less
ϕB	Core inside diameter	10mm (0.4 inch) or more
C	Left margin	2.54 mm (0.1 inch) or less
D	Right margin	2.54 mm (0.1 inch) or more
E	Printing area width	Max 64.35/71.12mm (2.53/2.8 inch)
F	Top margin	41.69 mm (1.64 inch) or more

5.7.5.2.2 Paper Quality

Paper of the following quality may be used.

Type	Paper Quality
Single-part paper	High quality paper

1 Paper smoothness must be 90 ~ 7 sec. for Beek and 75 ~ 300 sec. for Sheffield.

2 If you use paper other than that specified here, test it to verify that it prints without problems.

5.7.5.2.3 Paper Weight

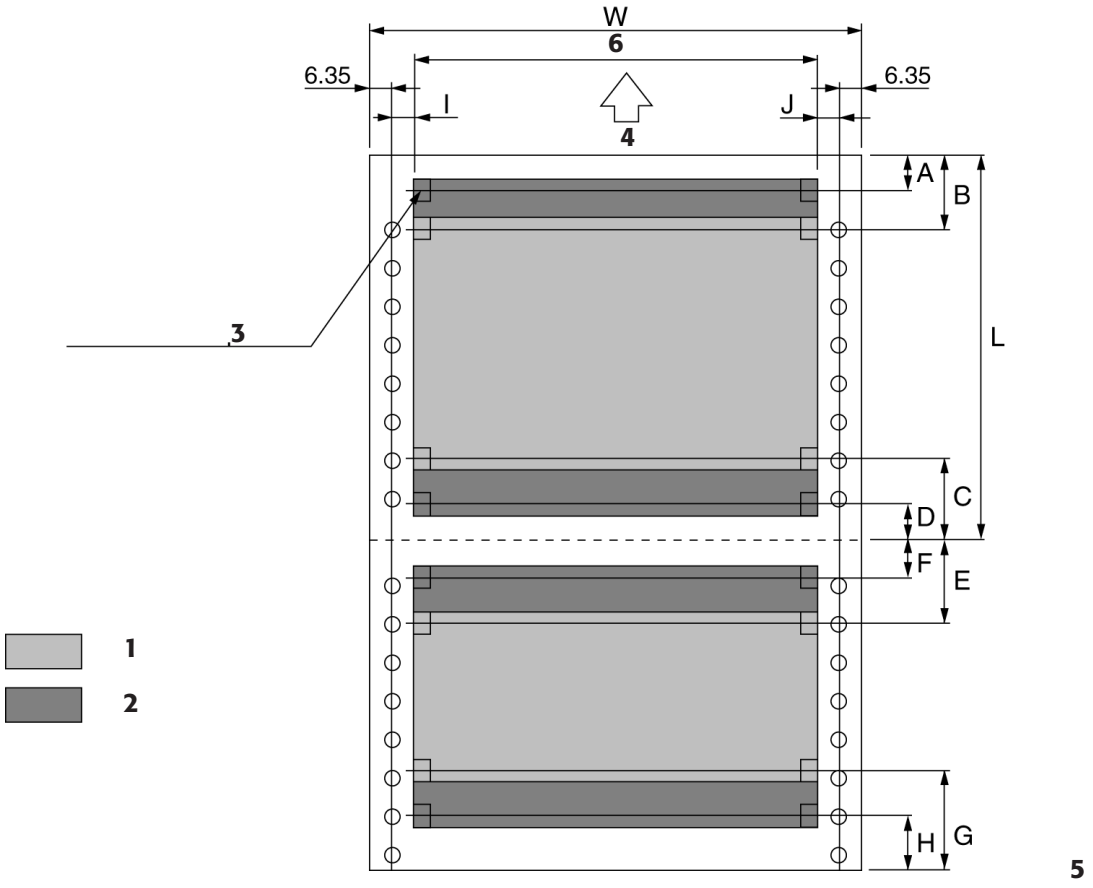
The weight of paper usable for printing .

Type	Paper Quality	Weight	Max. Copies	Total Paper Thickness
Multi-part paper	Pressure-sensitive paper	52~81g/m^2 (14~21 lb)	2 copies (original + 1 copy)	0.18mm or less

Note 1 The standard paper weight must be 57g/m^2 (15 lb) for the top sheet and 45 g/m^2 (12 lb) for the bottom sheet of multi-part paper.

5.7.5.3. Sprocket Paper (Tractor)

5.7.5.3.1 Paper size and Printing area



1 Printing area
2 Printable area
3 First character position
4 Paper inserting direction
5 Unit: mm
6 Maximum 160.02

The specification for the printable area differs from that for the printing area.

Symbol	Designation	Standard Value
W	Paper width	76.2~215.9mm (3~8.5 inch)
L	Paper length	76.2~355.6mm (3~14 inch) The length must be the one obtained via multiplying 25.4mm (1 inch) by an integer
A	Heading position	10.31mm (0.41 inch)
B	Top margin (on the 1st page)	25.4mm (1 inch)
C	Bottom margin, recommended	19.05mm (3/4 inch)
D	Bottom margin, printable	6.35mm (1.4 inch)
E	Top margin, recommended	25.4mm (1 inch)
F	Top margin, printable	10.31mm (0.41 inch)
G	Bottom margin, recommended	198mm (7.8 inch)
H	Bottom margin, printable	19.6mm (0.77 inch)
I	Unprintable left margin	11.43mm (9/20 inch)
J	Unprintable right margin	Paper width is 203.2mm (8 inch) or less: 11.43~21.59mm (9/20~0.85 inch) Paper width is 215.9mm (8.5 inch): 20.39~21.59mm (0.8~0.85 inch)

Note 1 Though you can print within the light shaded area (printable area), feeding may be less accurate.

Note 2 The print quality on the last page is not warrantied.

Note 3 Printing out of the designated printing area may result in poor printing quality or malfunction of the unit. Set the printing format cautiously.

Note 4 The horizontal perforated line should be placed in the middle of the sprocket hole interval. A horizontal perforated line close to a sprocket hole may let the paper slip off the holes, resulting in a paper jam.

Note 5 Auto parking function of Sprocket paper can operate up to 14".

5.7.5.3.2 Paper Quality

Paper of the following quality may be used.

Type	Paper Quality
Single-part paper	High quality paper
Multi-part paper	Pressure-sensitive paper, Carbon-lined paper or Interleaved paper(1)

Note 1 Interleaved paper is a multi-part paper with carbons inserted between copies.

1 Paper smoothness must be 90 ~ 7 sec. for Beek and 75 ~ 300 sec. for Sheffield.

2 If you use paper other than that specified here, test it to verify that it prints without problems.

5.7.5.3.3 Paper Weight and Maximum Duplicating Quantity

The weight of paper usable for printing and max. duplicating quantity are shown in the table below.

Type	Paper Quality	Weight	Max Copies	Total Paper Thickness
Single-part paper	High quality paper	52~81 g/m^2 (14~21 lb)	-	-
Multi-part paper	Pressure-sensitive paper, Carbon-lined paper	34~40 g/m^2 (9~11lb)	4 copies (original + 3 copies)	0.27mmm or less
	Interleaved paper(1)	38~45 g/m^2 (10~12 lb) Carbon 34 g/m^2 (9lb)	3 copies (original + 2 copies)	

Note 1 The thickness of carbon paper used for Interleaved paper must be 0.03 mm or less.

5.7.5.3.4 Fixing Method of Multi-part Paper Joint

The joint fixing method for a multi-part paper shall be spot-pasting, line-pasting or crimping. Spot pasting is the proper precaution against position deviation made when piling sheet tiers.

Crimping may cause position deviation of approx 3 mm.

Metal staples must not be used.

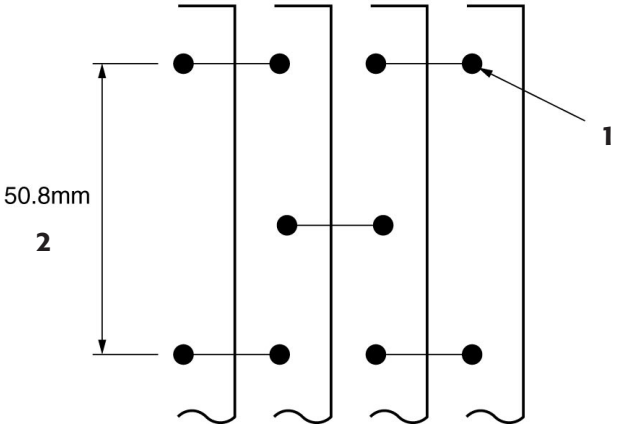
1 Spot Pasting

a Spot pasting must be conducted on both right/left sides. Paper which is pasted on only one side is not accepted.

b Equal amount paste shall be applied to the fixing points, whose size shall be f3 ~f5 mm.
Press the pasting points to prevent lifting.
Be careful not to generate distinct wrinkles.

c See the fig. below for the pasting positions.

d Apply spot pasting in zigzag alternately for each sheet.

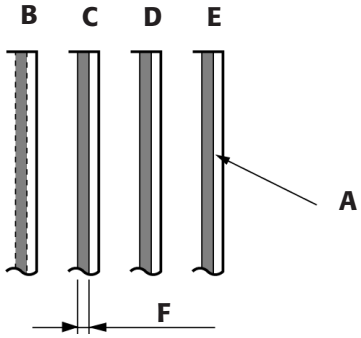


1 Pasting spot
2 50.8mm (2 inch)

2 Line Pasting

a Paste shall be applied evenly to the fixing line, whose width shall be 1 – 2 mm.
Press the pasting line to prevent lifting.
Be careful not to generate distinct wrinkles.

b Do not let paste leak out paper edges.



A Pasting line
B 1st
C 2nd
D 3rd
E 4th
F 1~2mm

3 Crimping

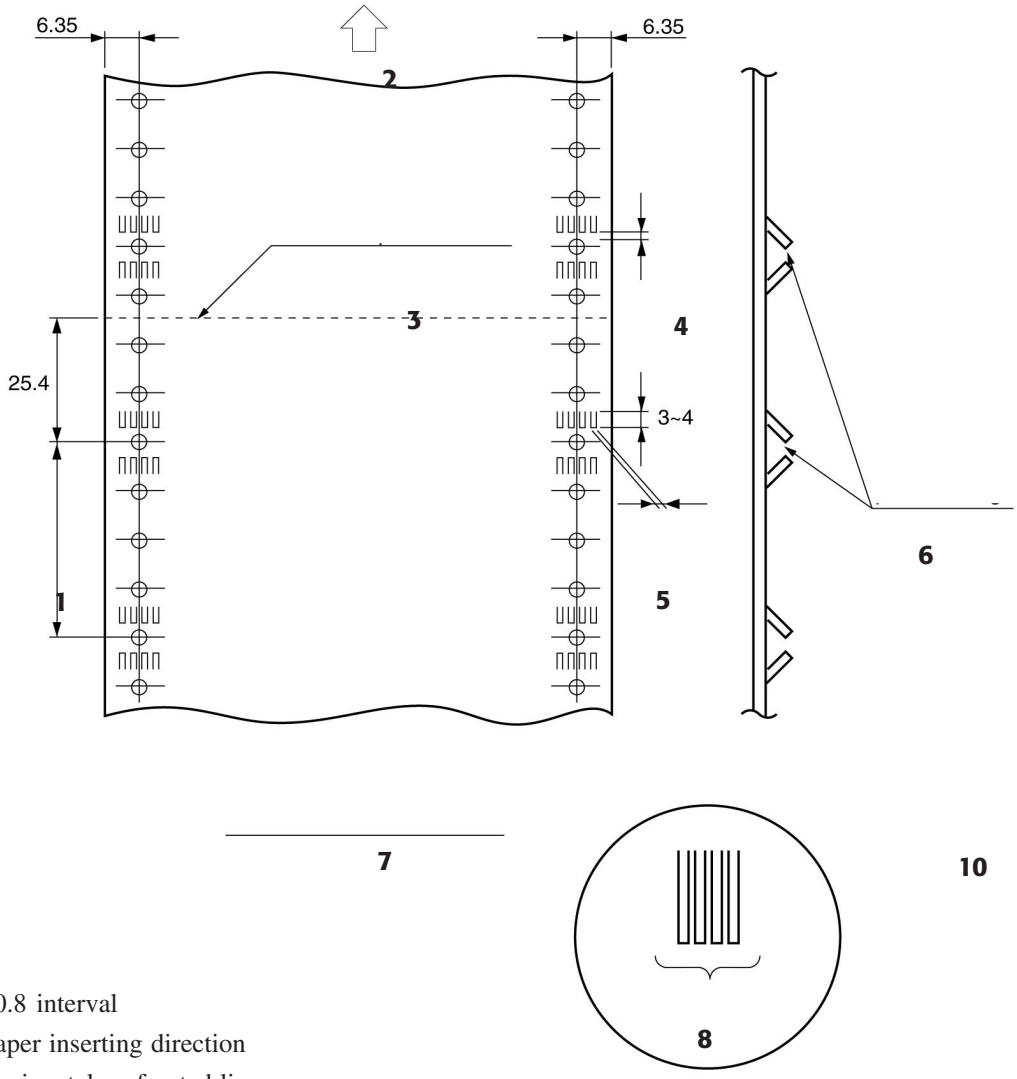
a Crimp paper on both right/left sides.

b Apply crimping from the front surface, making no protrusion on the surface.

c All the sheets must be engaged securely with each other at the crimp position free of lifting.

d Use a double-type crimp and apply crimping in the direction to produce the crimped mark horizontal to the paper right/left edges.

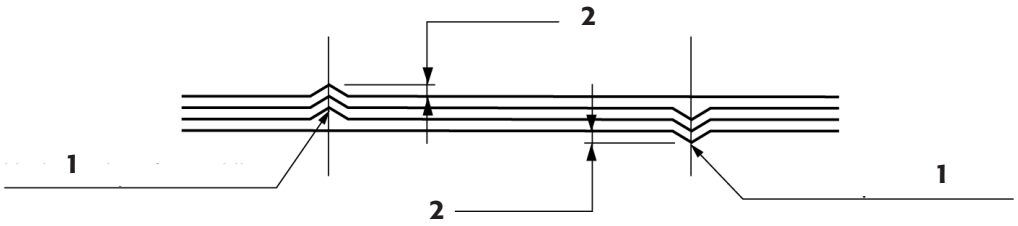
e Press paper after crimping to eliminate lifting.



1 50.8 interval
2 Paper inserting direction
3 Horizontal perforated line
4 2 or more
5 Approx. 1
6 Press paper to prevent lifting
7 Form/Position of Crimping
8 Quadruple crimping
9 Enlarged Figure of Crimped Mark
10 Unit: mm

5.7.5.3.5 Rising in Horizontal Perforated Line

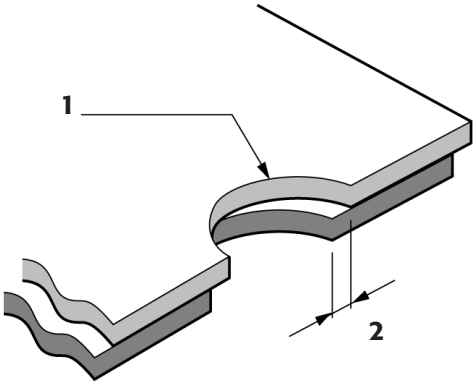
Protrusions in a horizontal perforated line may result in poor print quality, unstable paper feeding or frequent paper jam. Therefore, the rising height must be kept within 1mm.



1 Horizontal perforated line
2 Within 1mm

5.7.5.3.6 Position Deviation of Sprocket Holes

Deviation of the sprocket hole positions may be caused when each copy or tier is piled to produce multi-part paper. Use multi-part paper whose sprocket deviation is 0.4 mm or less.



Sectional View of Sprocket Holes

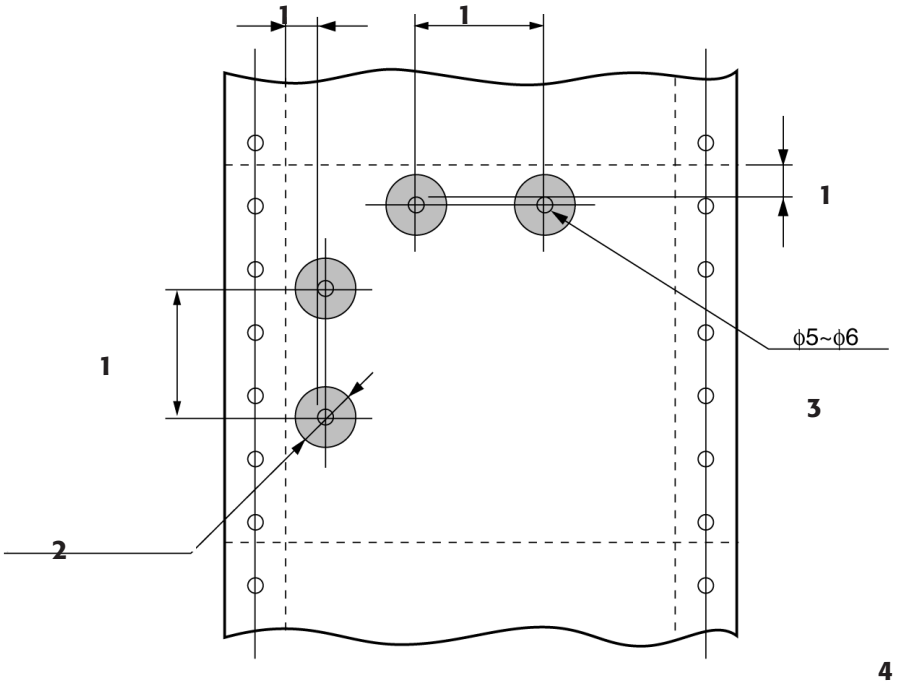
1 Sprocket hole
2 Deviation 0.4mm or less

5.7.5.3.7 Binding Holes

Do not use a paper with punched holes. It may invalidate your warranty.

If you choose to use punched paper, be sure to test it thoroughly. Follow these guidelines:

1. Do not print within 5 mm of the hole center.
2. Make sure that paper dust is not left on the paper.
3. If a hole passes over the paper sensor, a false paper end signal may result.
4. Make sure that the edges of holes are even with the paper surface. If they stick up, the printhead may not move smoothly.
5. The positions of holes should be as illustrated in the figure below.



1. 10 or more
2. ϕ 10 (shaded area) Do not print.
3. Binding hole
4. Unit: mm

5.7.5.3.8 Corner Cut

Do not use paper with corner cuts. It may invalidate your warranty.

If you choose to use corner cut paper, be sure to test it thoroughly. Follow these guidelines:

1 Do not print within the shaded area adjoining a corner cut.

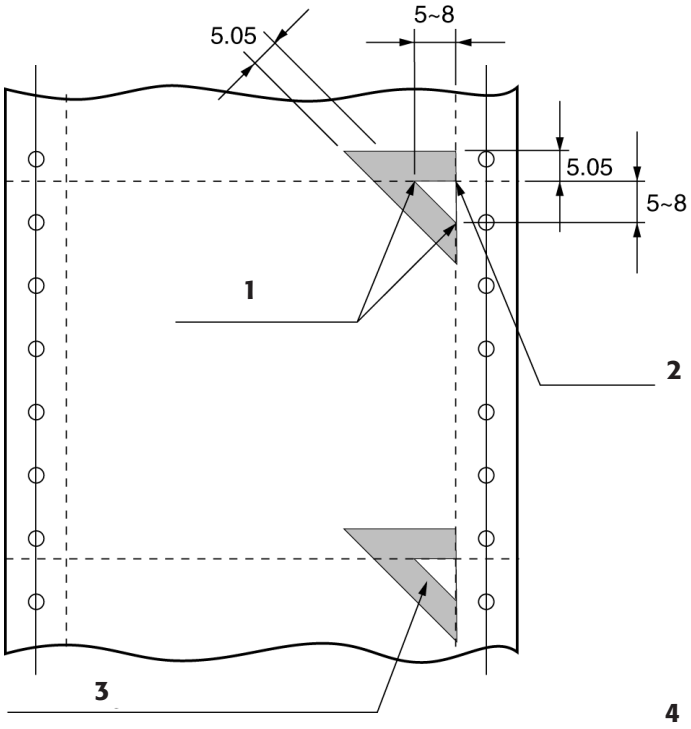
2 Make sure that paper dust is not left on the paper.

3 The perforation of the vertical/horizontal perforated line must not intersect with the corner cut to prevent the paper from peeling off. (The crossing position of the corner cut outline and the perforated line should be uncut.)

The carriage may be clogged with peeled-off paper.

4 If a corner cut passes over the paper sensor, a false Paper End signal may result.

5 The positions of corner cuts should be as given in the fig. below.



1 Uncut part of the perforated line

2 Corner cut

3 No printing within the shaded area

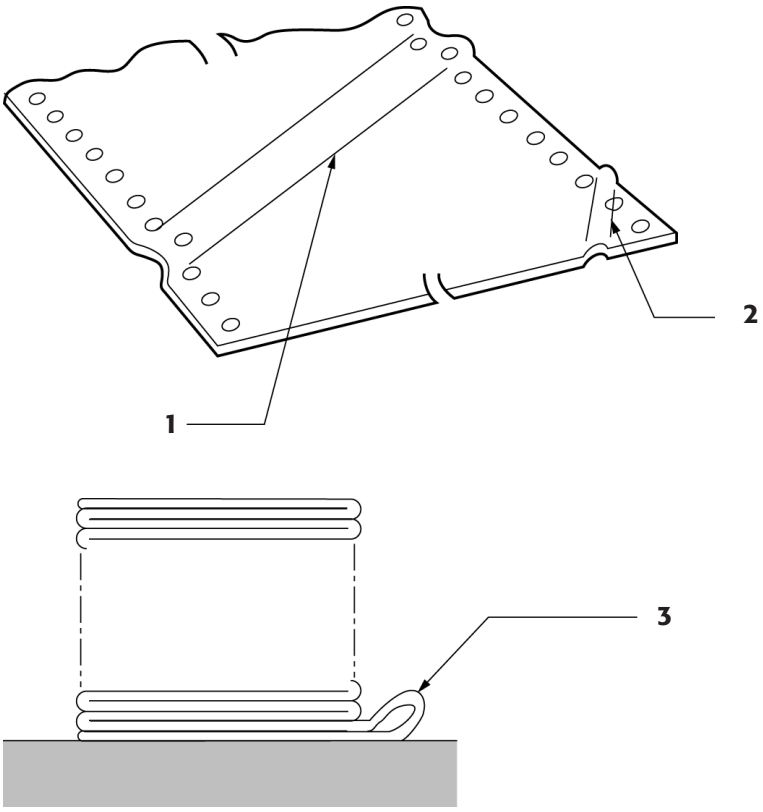
4 Unit: mm

5.7.5.3.9 Wrinkle, Pleat and Swell

Use paper, which has been folded zigzag on horizontal perforated lines, free of wrinkles and pleats.

Newly unpacked paper often has wrinkles or pleats on the first and last pages. Please eliminate pages having wrinkles and pleats before printing.

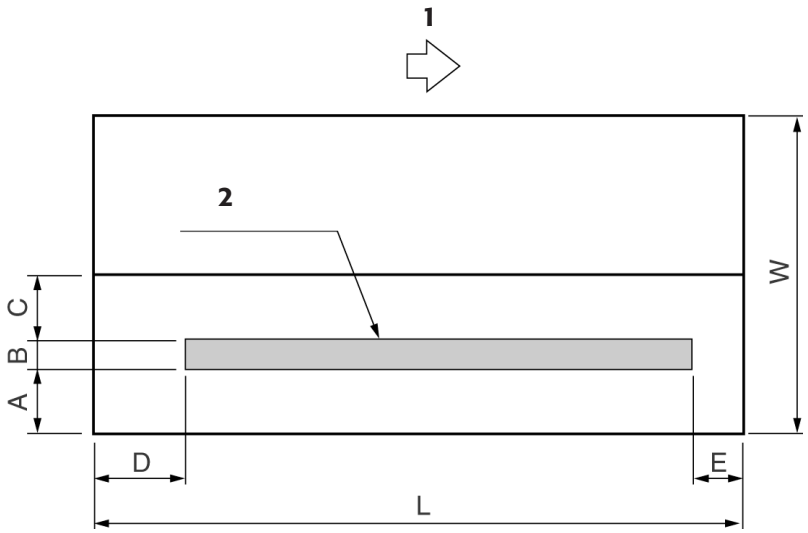
Do not utilize paper whose folding position inflates as illustrated in the fig below, because it may cause malfunction in paper feed.



1 Wrinkle
2 Pleat
3 Rounded ends

5.7.5.4. MICR (only with MICR Type)

5.7.5.4.1 Paper Size and Scanning Area



1 Paper inserting direction

2 Scanning Area

Symbol	Designation	Standard Value
W	Paper width	76~78mm (2.99~3.07 inch)
L	Paper length	174~176mm (6.85~6.93 inch)
A	-	4.8mm (0.19 inch)
B	Scanning area	6.4mm (0.25 inch)
C	-	4.8mm (0.19 inch)
D	-	6.35mm (1/4 inch) or more
E	-	50mm (1.97 inch) or more

5.7.5.4.2 Paper Weight

The weight of paper usable for Scanning

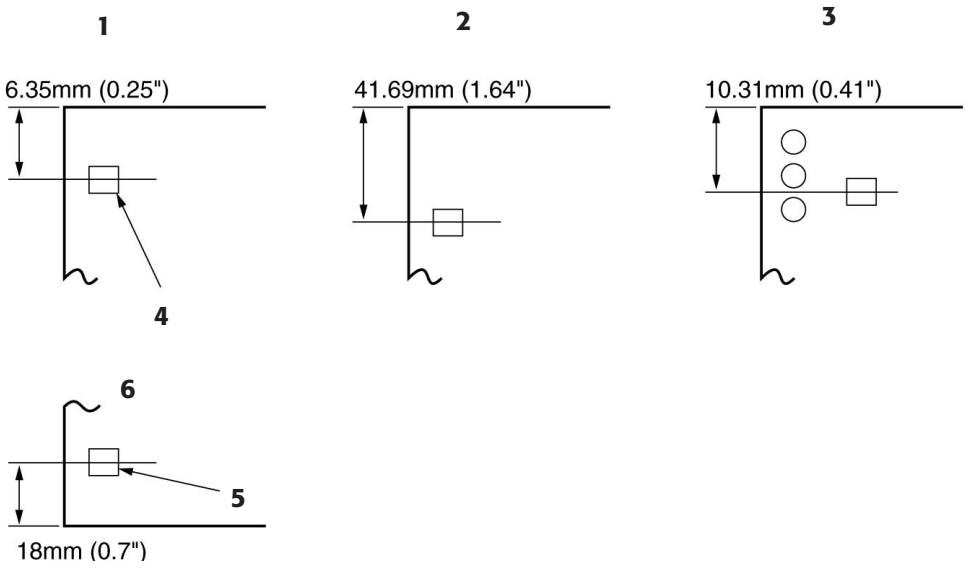
Type	Weight	Paper Thickness
Single-part paper only	79~87 g/m^2 (21~23 lb)	0.1~0.11mm

5.8 Paper Feed Specifications

5.8.1 Paper feed methods/Paths

a	Friction feed	For Cut-sheet paper
b	Friction feed	For Roll paper
c	Push tractor feed (Front path)	For Sprocket paper (Tractor)

5.8.2 Paper Positioning Restrictions



1 Cut-sheet paper (slip)
2 Roll paper
3 Sprocket paper (Tractor)
4 Printing position on the first line
5 Printing position on the last line
6 Cut-sheet paper (Counterfoil, Stub)

5.8.3 Paper Tear-off

Roll paper

The paper can be torn off 41.69mm (1.64 inch) above the first printed line. A sharp serrated edge is provided on the top cover for paper tear-off.

Sprocket paper (Tractor)

The paper can be torn off 35.96mm (1.42 inch) above the first printed line. A sharp serrated edge is provided on the access cover for paper tear-off.

5.8.4 Paper End Detection

1 With cut-sheet paper feed, the paper end is detected when the remaining paper length is about 19.6mm (0.77 inch) from the last printed line.
2 With roll paper feed, the paper end is detected when the remaining paper length is about 87.83mm (3.46 inch) from the last printed line.
3 With Sprocket paper (Tractor) feed, the paper end is detected when the remaining paper length is about 19.6mm (0.77 inch) from the last printed line.
4 Upon detecting the paper end, the printer stops printing and sends a paper end signal to the interface.

5.9 MICR Specifications (Only with MICR type)

5.9.1 Available Fonts
E-13B and CMC7 (can be selected command)

5.9.2 Scanning Speed
9.2 inches / sec

5.9.3 Recognition Rating
95% or more at 25°C

Rating = ([total checks - number misread or not identified] / total checks) x 100

Check paper tested is OKI recognized check paper

5.9.4 Reliability
Life: 240,000 passes

Passes: reading and printing on U.S. personal check 152mm long

5.9.5 Readable Area
Conforms to the APPENDIX B MEDIA SPECIFICATIONS 4

5.9.6 Media Specifications
Conforms to the APPENDIX B MEDIA SPECIFICATIONS 4

5.9.7 Other Relevant Standards
The above specifications given in sections 5.9.4 and 5.9.5 take precedence over the standards shown below.

1 ANSI X9.13 American National Standard Specification for Placement and Location of MICR Printing - May 1990

2 ANSI X9 / TG-2 ANSI Technical Guideline: Understanding and Designing Checks, Guideline for the standardization of check writing, check design and data element location - 1990

3 ANSI X9.27 American National Standard Specification for Print Specification for Magnetic Ink Character Recognition (MICR) - August 1988

4 ISO 2033-1983 Information Processing - Coding of Machine Readable Characters (MICR & OCR)

5 ISO 1004-1997 Information Processing - Magnetic Ink Character Recognition - Print Specifications

5.10 Ribbon Specifications

Genuine Oki Data cartridge ribbon

Ink color: Black

Ribbon life: Approximately 3 million characters (when 1 character = 14 dots)

5.11 Reliability

1 MTBF (mean time between failures)
10,000 hours of power-on time at 25% duty cycle. Page density: 35%

2 Printhead life
200 million characters (average) in Utility Print Quality mode.

3 Printer life
5 years of power-on time at 10 hours/day, 365 days/year.

4 MTTR (mean time to repair)
15 minutes, major sub-assembly level.

6. Command Description

6.1 Control Code List

6.1.1 OEM — Standard Model

6.1.1.1 Function Code

1 List of Function Codes

No.	HEX	DEC	CODE	Remarks	Print Start
1	0A	10	LF	Print/line feed	O
2	0C	12	FF	Cut Sheet paper eject or sprocket paper form feed	O
3	0D	13	CR	Print/carriage return	O
4	0F	15	SI	To set condense	X
5	12	18	DC2	To reset condense	X
6	18	24	CAN	Print data cancel	X
7	1B	27	ESC	ESC sequence start	-
8	1D	29	GS	GS sequence start	-
9	1E	30	RS	Journal Tab	X
10	1F	31	US	US sequence start	-

* Print Start Column

O : Command that invokes print start

X : Command that does not invoke print start

^ : Command that sometimes invokes print start

This applies hereafter.

6.1.1.2 ESC Sequence

1 Command recognition

A code subsequent to an ESC code is handled as a 7-bit code. (MSB=0)

An ESC code that is followed by a functional code (except ESC CR) is handled as a single functional code.

If the ESC codes follow each other, they are treated as one ESC code.

Example: ESC ESC 2 is treated as ESC 2.

2 ESC sequence list

No.	HEX	Command Sequence	Functions	Print Start
1	1B OD	ESC CR n	To enable/disable auto line feed	X
2	1B OF	ESC SI	To set Condense	X
3	1B 10 44	ESC DLE D Pno Pa1 Pb1… Pan Pbn	To set up menu items	O
4	1B 20	ESC SP n	To set the amount of space to the right side of a character	X
5	1B 24	ESC $ n1 n2	To designate the absolute position	^
6	1B 25 35	ESC % 5	To feed paper by n/144″	O
7	1B 2A	ESC* m n1 n2 data	To designate bit image mode	^
8	1B 2D	ESC - n	To designate/clear underline	X
9	1B 32	ESC 2	To set 1/6″ line feed	X
10	1B 33	ESC 3 n	To set n/216″ line feed	X
11	1B 3C	ESC <	To designate one line uni-directional print	X
12	1B 40	ESC @	To initialize the printer	X
13	1B 43	ESC C n	To set the page length of sprocket paper	X
14	1B 45	ESC E n	To set/reset emphasize print	X
15	1B 47	ESC G n	To set/reset double strike print	X
16	1B 4E	ESC N n	To set sprocket paper perforation skip	X
17	1B 4F	ESC O	To reset sprocket paper perforation skip	X
18	1B 52	ESC R n	To select international character set	X
19	1B 57	ESC W n	To set/reset double width print	X
20	1B 63 30	ESC c 0 n	To select sheet subject to printing	X
21	1B 63 31	ESC c 1 n	To select sheet subject to setting	X
22	1B 63 34	ESC c 4 n	To select print stop sensor	X
23	1B 64	ESC d n	To feed paper by n lines	O
24	1B 66	ESC f t1 t2	To set cut sheet paper wait time	X
25	1B 69	ESC i	Full cut	X
26	1B 6D	ESC m	To cut partially (leaving uncut at 1 point)	X
27	1B 74	ESC t n	To select character code table	X
28	1B 77	ESC w n	To set/reset double height print	X
29	1B 78	ESC x n	To select print font	X
30	1B 7A	ESC z n	To set/reset Receipt+Journal same data print	X

6.1.1.3 GS sequence

1 Command recognition

GS codes in combination are handled the same way that ESC codes are handled.

2 GS Sequence table

No.	HEX	Command Sequence	Functions	Print Start
1	1D 45	GS E n	To select print speed and printhead current flow time.	X
2	1D 76	GS v n	To select Validation inserting position	X

6.1.1.4 US Sequence

No.	HEX	Command Sequence	Functions	Print Start
0	1F 0E	US 0EH n	High Priority (special) command	X
1	1F 0E 00	US 0EH 00H	Eject or form feed	X
2	1F 0E 01	US 0EH 01H	Line feed	X
3	1F 0E 02	US 0EH 02H	Full cut	X
4	1F 0E 03	US 0EH 03H	To cut partially. (Uncut at 1 point)	X
5	1F 0E 05	US 0EH 05H	Auto load (Sprocket)	X
6	1F 0E 06	US 0EH 06H	Auto park (Sprocket)	X
7	1F 0E 07	US 0EH 07H	To feed to the cut position (Sprocket)	X
8	1F 0E 08	US 0EH 08H	To feed to the print position (Sprocket)	X
9	1F 0E 09	US 0EH 09H	Receipt LF	X
10	1F 0E 0B	US 0EH 0BH	Journal LF	X
11	1F 0E 10	US 0EH 10H n	Slip LF	X
12	1F 0E 11	US 0EH 11H n1 n2 n3 n4	LED control	X
13	1F 0E 14	US 0EH 14H n	Receipt Paper Removal Receiver Feed	X
14	1F 0E 15	US 0EH 15H n	Journal Paper Removal Receiver Feed	X

6.1.2 OKI Standard Model

6.1.2.1 Function Code

1 List of Function Codes

No.	HEX	DEC	CODE	Remarks	Print Start
1	0A	10	LF	Print/line feed	O
2	0C	12	FF	Eject Cut Sheet paper or form-feed sprocket paper	O
3	0D	13	CR	Print/carriage return	O
4	0F	15	SI	Condense Designate	X
5	12	18	DC2	Condense Clear	X
6	18	24	CAN	Cancel print data	X
7	10	16	DLE	Start DLE sequence	—
8	1B	27	ESC	Start ESC sequence	—
9	1C	28	FS	Start FS sequence	—
10	1D	29	GS	Start GS sequence	—
11	1E	30	RS	Journal Tab	X

* Print Start Column

O : Command that invokes print start

X : Command that does not invoke print start

^ : Command that sometimes invokes print start

This applies hereafter.

DLE Sequence

1 Command recognition

A code that follows a DLE code is treated as a 7-bit code. (MSB=0)

For the parameters, which vary among the commands, see each command's functions.

If a function code follows a DLE code, it is is treated as a stand-alone function code.

If DLE codes follow each other, they are treated as one DLE code.

Example: DLE DLE EOT n is treated as command DLE EOT n.

2 DLE sequences

No.	HEX	Command Sequence	Functions	Print Start
1	10 04	DLE EOT n	Real-time status sending	X
2	10 04 08	DLE EOT BS n	Real-time MICR status sending	X
3	10 05	DLE ENQ n	Real-time request to Printer	X

6.1.2.2 ESC Sequence

1 Command recognition

ESC codes in combination are handled the same way that DLE codes are handled.

2 ESC sequence list

No.	HEX	Command Sequence	Functions	Print Start
1	1B OF	ESC SI	Condense Designate	X
2	1B 10 44	ESC DLE D Pno Pa1 Pb1…Pan Pbn	Sets up menu items	O
3	1B 10 61	ESC DLE a Pno n	Enables/disables auto status send	X
4	1B 10 63	ESC DLE c Pno 0 n	Selects print sheet	X
5	1B 10 63	ESC DLE c Pno 1 n	Selects set sheet	X
6	1B 10 6C	ESC DLE I Pno n1 n2	Sets Left Margin	X
7	1B 10 72	ESC DLE r Pno n	Real-time status sending	X
8	1B 10 76	ESC DLE v Pno n	Selects Validation insert position	X
9	1B 20	ESC SP n	Sets character right-side space	X
10	1B 21	ESC ! n	Designates Print Mode all at once	X
11	1B 24	ESC $ n1 n2	Designates absolute position	^
12	1B 25 35	ESC % 5 n	Feeds paper in increments of n/144″	O
13	1B 25 39	ESC % 9 n	Sets n/144″ line feed	X
14	1B 2A	ESC * m n1 n2 data	Designates Bit Image Mode	^
15	1B 2D	ESC - n	Designates/clears Underline	X
16	1B 30	ESC 0	Sets 1/8″ line feed	X
17	1B 31	ESC 1	Sets 7/72″ line feed	X
18	1B 32	ESC 2	Sets 1/6″ line feed	X
19	1B 33	ESC 3 n	Sets n/144″ line feed	X
20	1B 34	ESC 4	Sets Italic Mode	X
21	1B 35	ESC 5	Resets Italic Mode	X
22	1B 3C	ESC <	Designates one-line uni-directional print	X
23	1B 3D	ESC = n	Selects peripheral device	X
24	1B 40	ESC @	Initializes printer	X
25	1B 41	ESC A n	Sets n/72″ line feed pitch	X
26	1B 43	ESC C n	Sets page length for Sprocket paper	X
27	1B 45	ESC E n	Designates/cancels Emphasize print	X
28	1B 47	ESC G n	Designates/cancels Double Strike print	X
29	1B 4A	ESC J n	Feeds paper in increments of n/144″	O
30	1B 4E	ESC N n	Sets Sprocket paper perforation skip	X
31	1B 4F	ESC O	Resets Sprocket paper perforation skip	X
32	1B 52	ESC R n	Selects international character set	X
33	1B 55	ESC U n	Designates/cancels uni-directional print	X
34	1B 57	ESC w n	Designates/cancels double width print	X
35	1B 5C	ESC \ n1 n2	Designates relative position	^
36	1B 5E	ESC ^ m n1 n2	Designates 9-pin Bit Image Mode	X
37	1B 61	ESC a n	Aligns positions	X
38	1B 63 30	ESC c 0 n	Selects print sheet	X
39	1B 63 31	ESC c 1 n	Selects set sheet	X
40	1B 63 32	ESC c 3 n	Selects paper sensor that enables the paper end signal; valid only with Parallel I/F	X
41	1B 63 34	ESC c 4 n	Selects print stop sensor	X
42	1B 63 35	ESC c 5 n	Enables/disables panel switch	X
43	1B 64	ESC d n	Feeds paper for n lines	O
44	1B 66	ESC f t1 t2	Sets Cut paper wait time	X
45	1B 69	ESC i	Full cut	X

46	1B 6D	ESC m	Partial cut (keeping one point uncut)	X
47	1B 70	ESC p m t1 t2	Generates designated pulse (Open Cash Drawer)	X
48	1B 74	ESC t n	Selects character code table	X
49	1B 75	ESC u n	Sends peripheral device status	X
50	1B 76	ESC v	Sends paper sensor status	X
51	1B 77	ESC w n	Sets/resets Double Height print	X
52	1B 7A	ESC z n	Designates/cancels Receipt+Journal same data print	X
53	1B 10 41	ESC DLE A Pno N1…N8	Selects and sets the barcode type and size	X
54	1B 10 42	ESC DLE B Pno Pm DATA	Prints barcode data	^

* ***The ESC DLE sequence other than No. 2~8, 53, 54 will be ignored by the sequence.***

The data that follows "Pno" will be ignored by as many bytes as set by Pno.

6.1.2.3 FS Sequence

1 Command recognition

FS codes in combination are handled the same way that DLE codes are handled.

2 FS Sequence table

No.	HEX	Command Sequence	Functions	Print Start
1	1C 61 30	FS a 0 n	Reads Check paper	X
2	1C 61 31	FS a 1	Loads Check paper to the print start position	X
3	1C 61 32	FS a 2	Ejects Check paper	X
4	1C 62	FS b	Requests for resending a result of reading Check paper	X

6.1.2.4 GS Sequence

1 Command recognition

GS codes are handled the same way that DLE codes are handled.

2 GS Sequence table

No.	HEX	Command Sequence	Functions	Print Start
1	1D 05	GS ENQ	Sends a status of the printer status real-time	X
2	1D 45	GS E n	Selects print speed and printhead current flow time	X
3	1D 49	GS I n	Sends a printer ID	X
4	1D 61	GS a n	Enables/disables auto status send	X
5	1D 72	GS r n	Sends a status	X

6.2 Character Set

6.2.1 Code table (OEM — Standard Type)

The character code tables follow.

6.2.1.1 USA

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
0001 (x1H)	!	1	A	Q	a	q	ü	æ	í	▒	┴	╤	ß	±
0010 (x2H)	"	2	B	R	b	r	é	Æ	ó	▓	┬	╥	Γ	≥
0011 (x3H)	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
0100 (x4H)	$	4	D	T	d	t	ä	ö	ñ	┤	─	╘	Σ	⌠
0101 (x5H)	%	5	E	U	e	u	à	ò	Ñ	╡	┼	╒	σ	⌡
0110 (x6H)	&	6	F	V	f	v	å	û	ª	╢	╞	╓	µ	÷
0111 (x7H)	'	7	G	W	g	w	ç	ù	º	╖	╟	╫	τ	≈
1000 (x8H)	(	8	H	X	h	x	ê	ÿ	¿	╕	╚	╪	Φ	°
1001 (x9H)	)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┘	Θ	•
1010 (xAH)	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
1011 (xBH)	+	;	K	[	k	{	ï	¢	½	╗	╦	▉	δ	√
1100 (xCH)	,	<	L	\	l	|	î	£	¼	╝	╠	■	∞	n
1101 (xDH)	−	=	M	]	m	}	ì	¥	¡	╜	═	▌	ø	²
1110 (xEH)	.	>	N	^	n	~	Ä	₧	«	╛	╬	▐	ε	■
1111 (xFH)	/	?	O	_	o		Å	ƒ	»	┐	╧	▄	∩	

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to “American.”

4 The blank space (20H, 7FH, FFH) indicates a space code.

6.2.1.2 Canada-French

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p	Ç	É	¦	▒	└	╨	α	≡
0001 (x1H)	!	1	A	Q	a	q	ü	È	´	▓	┴	╤	ß	±
0010 (x2H)	"	2	B	R	b	r	é	Ê	ó	▉	┬	╥	Γ	≥
0011 (x3H)	#	3	C	S	c	s	â	ô	ú	▏	├	╙	π	≤
0100 (x4H)	$	4	D	T	d	t	Â	Ë	··	┤	─	╘	Σ	⌠
0101 (x5H)	%	5	E	U	e	u	à	Ï	¸	╡	┼	╒	σ	⌡
0110 (x6H)	&	6	F	V	f	v	¶	û	³	╢	╞	╓	µ	÷
0111 (x7H)	'	7	G	W	g	w	ç	ù	¯	╖	╟	╫	τ	≈
1000 (x8H)	(	8	H	X	h	x	ê	¤	Î	╕	╚	╪	Φ	°
1001 (x9H)	)	9	I	Y	i	y	ë	Ô	⌐	╣	╔	┘	Θ	•
1010 (xAH)	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
1011 (xBH)	+	;	K	[	k	{	ï	¢	½	╗	╦	█	δ	√
1100 (xCH)	,	<	L	\	l	|	î	£	¼	╝	╠	▄	∞	n
1101 (xDH)	-	=	M	]	m	}	‗	Ù	¾	╜	═	▌	ø	²
1110 (xEH)	.	>	N	^	n	~	À	Û	«	╛	╬	▐	ε	■
1111 (xFH)	/	?	O	_	o		§	ƒ	»	┐	╧	▀	∩	

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to "American."

4 The blank space (20H, 7FH, FFH) indicates a space code.

6.2.1.3 Multilingual

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p	Ç	É	á	▒	└	ð	Ó	—
0001 (x1H)	!	1	A	Q	a	q	ü	æ	í	▒	┴	Ð	ß	±
0010 (x2H)	"	2	B	R	b	r	é	Æ	ó	▓	┬	Ê	Ô	‗
0011 (x3H)	#	3	C	S	c	s	â	ô	ú	│	├	Ë	Ò	¾
0100 (x4H)	$	4	D	T	d	t	ä	ö	ñ	┤	─	È	õ	¶
0101 (x5H)	%	5	E	U	e	u	à	ò	Ñ	Á	┼	ı	Õ	§
0110 (x6H)	&	6	F	V	f	v	å	û	ª	Â	ã	Í	µ	÷
0111 (x7H)	'	7	G	W	g	w	ç	ù	º	À	Ã	Î	þ	¸
1000 (x8H)	(	8	H	X	h	x	ê	ÿ	¿	©	╚	Ï	Þ	°
1001 (x9H)	)	9	I	Y	i	y	ë	Ö	®	╣	╔	┘	Ú	¨
1010 (xAH)	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Û	·
1011 (xBH)	+	;	K	[	k	{	ï	ø	½	╗	╦	█	Ù	1
1100 (xCH)	,	<	L	\	l	|	î	£	¼	╝	╠	▄	ý	3
1101 (xDH)	−	=	M	]	m	}	ì	Ø	¡	¢	═	¦	Ý	2
1110 (xEH)	.	>	N	^	n	~	Ä	×	«	¥	╬	Ì	¯	■
1111 (xFH)	/	?	O	_	o	⌫	Å	ƒ	»	┐	☼	▄	´	

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to “American.”

4 The blank space (20H, 7FH, FFH) indicates a space code.

6.2.1.4 Portugal

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
0001 (x1H)	!	1	A	Q	a	q	ü	À	í	▒	┴	╤	ß	±
0010 (x2H)	"	2	B	R	b	r	é	È	ó	▓	┬	╥	Γ	≥
0011 (x3H)	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
0100 (x4H)	$	4	D	T	d	t	ã	õ	ñ	┤	─	╘	Σ	⌠
0101 (x5H)	%	5	E	U	e	u	à	ò	Ñ	╡	┼	╒	σ	⌡
0110 (x6H)	&	6	F	V	f	v	Á	Ú	ª	╢	╞	╓	µ	÷
0111 (x7H)	'	7	G	W	g	w	ç	ù	º	╖	╟	╫	τ	≈
1000 (x8H)	(	8	H	X	h	x	ê	Ì	¿	╕	╚	╪	Φ	°
1001 (x9H)	)	9	I	Y	i	y	Ê	Õ	Ò	╣	╔	┘	Θ	•
1010 (xAH)	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
1011 (xBH)	+	;	K	[	k	{	Í	¢	½	╗	╦	█	δ	√
1100 (xCH)	,	<	L	\	l	|	Ô	£	¼	╝	╠	▄	∞	n
1101 (xDH)	-	=	M	]	m	}	ì	Ù	¡	╜	═	▌	ø	²
1110 (xEH)	.	>	N	^	n	~	Ã	₧	«	╛	╬	▐	ε	■
1111 (xFH)	/	?	O	_	o	⌂	Â	Ó	»	┐	╧	▀	∩	

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to "American."

4 The blank space (20H, 7FH, FFH) indicates a space code.

6.2.1.5 Norway

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
0001 (x1H)	!	1	A	Q	a	q	ü	æ	í	▒	┴	╤	ß	±
0010 (x2H)	"	2	B	R	b	r	é	Æ	ó	▒	┬	╥	Γ	≥
0011 (x3H)	#	3	C	S	c	s	â	ô	ú	▒	├	╙	π	≤
0100 (x4H)	$	4	D	T	d	t	ä	ö	ñ	▒	─	╘	Σ	⌠
0101 (x5H)	%	5	E	U	e	u	à	ò	Ñ	▒	┼	╒	σ	⌡
0110 (x6H)	&	6	F	V	f	v	å	û	ª	▒	╞	╓	µ	÷
0111 (x7H)	'	7	G	W	g	w	ç	ù	º	▒	╥	╫	╪	τ	≈
1000 (x8H)	(	8	H	X	h	x	ê	ÿ	¿	▒	╕	╙	╪	Φ	°
1001 (x9H)	)	9	I	Y	i	y	ë	Ö	⌐	▒	╣	╒	┘	Θ	•
1010 (xAH)	*	:	J	Z	j	z	è	Ü	¬	▒	╚	╓	┌	Ω	·
1011 (xBH)	+	;	K	[	k	{	ï	ø	½	▒	╕	╫	▒	δ	√
1100 (xCH)	,	<	L	\	l	|	î	£	¼	▒	╣	╟	▬	∞	n
1101 (xDH)	-	=	M	]	m	}	ì	Ø	¡	▒	╚	═	▌	ø	²
1110 (xEH)	.	>	N	^	n	~	Ä	Pt	«	▒	╜	╬	▐	ε	■
1111 (xFH)	/	?	O	_	o		Å	ƒ	¤	▒	╖	╧	▀	∩	

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to "American."

4 The blank space (20H, 7FH, FFH) indicates a space code.

6.2.1.6 BRASCII

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p				°	À	Ð	à	ð
0001 (x1H)	!	1	A	Q	a	q			¡	±	Á	Ñ	á	ñ
0010 (x2H)	"	2	B	R	b	r			¢	²	Â	Ò	â	ò
0011 (x3H)	#	3	C	S	c	s			£	³	Ã	Ó	ã	ó
0100 (x4H)	$	4	D	T	d	t			¤	´	Ä	Ô	ä	ô
0101 (x5H)	%	5	E	U	e	u			¥	µ	Å	Õ	å	õ
0110 (x6H)	&	6	F	V	f	v			¦	¶	Æ	Ö	æ	ö
0111 (x7H)	'	7	G	W	g	w			§	·	Ç	Œ	ç	œ
1000 (x8H)	(	8	H	X	h	x			¨	¸	È	Ø	è	ø
1001 (x9H)	)	9	I	Y	i	y			©	¹	É	Ù	é	ù
1010 (xAH)	*	:	J	Z	j	z			ª	º	Ê	Ú	ê	ú
1011 (xBH)	+	;	K	[	k	{			«	»	Ë	Û	ë	û
1100 (xCH)	,	<	L	\	l	|			¬	¼	Ì	Ü	ì	ü
1101 (xDH)	-	=	M	]	m	}			-	½	Í	Ý	í	ý
1110 (xEH)	.	>	N	^	n	~			®	¾	Î	Þ	î	þ
1111 (xFH)	/	?	O	_	o				¯	¿	Ï	ß	ï	ÿ

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to “American.”

4 The blank space (20H, 7FH, A0H) indicates a space code.

5 8xH and 9xH are ignored. (Shaded areas)

6.2.1.7 Abicomp

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p				Ò	¡	ò		
0001 (x1H)	!	1	A	Q	a	q			À	Ó	à	ó		
0010 (x2H)	"	2	B	R	b	r			Á	Ô	á	ô		
0011 (x3H)	#	3	C	S	c	s			Â	Õ	â	õ		
0100 (x4H)	$	4	D	T	d	t			Ã	Ö	ã	ö		
0101 (x5H)	%	5	E	U	e	u			Ä	Œ	ä	œ		
0110 (x6H)	&	6	F	V	f	v			Ç	Ù	ç	ù		
0111 (x7H)	'	7	G	W	g	w			È	Ú	è	ú		
1000 (x8H)	(	8	H	X	h	x			É	Û	é	û		
1001 (x9H)	)	9	I	Y	i	y			Ê	Ü	ê	ü		
1010 (xAH)	*	:	J	Z	j	z			Ë	Ÿ	ë	ÿ		
1011 (xBH)	+	;	K	[	k	{			Ì	¨	ì	ß		
1100 (xCH)	,	<	L	\	l	|			Í	£	í	ª		
1101 (xDH)	–	=	M	]	m	}			Î	•	î	º		
1110 (xEH)	.	>	N	^	n	~			Ï	§	ï	¿		
1111 (xFH)	/	?	O	_	o				Ñ	º	ñ	±		

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to “American.”

4 The blank space (20H, 7FH, A0H) indicates a space code.

5 8xH, 9xH, ExH, and FxH are ignored. (Shaded areas)

6.2.1.8 Multilingual 858

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p	Ç	É	á	▒	└	ð	Ó	—
0001 (x1H)	!	1	A	Q	a	q	ü	æ	í	▒	┴	Ð	ß	±
0010 (x2H)	"	2	B	R	b	r	é	Æ	ó	▓	┬	Ê	Ô	‗
0011 (x3H)	#	3	C	S	c	s	â	ô	ú	│	├	Ë	Ò	¾
0100 (x4H)	$	4	D	T	d	t	ä	ö	ñ	┤	─	È	õ	¶
0101 (x5H)	%	5	E	U	e	u	à	ò	Ñ	Á	┼	€	Õ	§
0110 (x6H)	&	6	F	V	f	v	å	û	ª	Â	ã	Í	µ	÷
0111 (x7H)	'	7	G	W	g	w	ç	ù	º	À	Ã	Î	þ	¸
1000 (x8H)	(	8	H	X	h	x	ê	ÿ	¿	©	╚	Ï	Þ	°
1001 (x9H)	)	9	I	Y	i	y	ë	Ö	®	╣	╔	┘	Ú	··
1010 (xAH)	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Û	·
1011 (xBH)	+	;	K	[	k	{	ï	ø	½	╗	╦	▉	Ù	1
1100 (xCH)	,	<	L	\	l	|	î	£	¼	╝	╠	■	ý	3
1101 (xDH)	-	=	M	]	m	}	ì	Ø	¡	¢	═	¦	Ý	2
1110 (xEH)	.	>	N	^	n	~	Ä	×	«	¥	╬	Ì	¯	■
1111 (xFH)	/	?	O	_	o		Å	ƒ	»	┐	¤	■	´	

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to "American."

4 The blank space (20H, 7FH, FFH) indicates a space code.

6.2.1.9 ISO 8859/15

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p				°	À	Ð	à	ð
0001 (x1H)	!	1	A	Q	a	q			¡	±	Á	Ñ	á	ñ
0010 (x2H)	"	2	B	R	b	r			¢	²	Â	Ò	â	ò
0011 (x3H)	#	3	C	S	c	s			£	³	Ã	Ó	ã	ó
0100 (x4H)	$	4	D	T	d	t			?	Z	Ä	Ô	ä	ô
0101 (x5H)	%	5	E	U	e	u			¥	µ	Å	Õ	å	õ
0110 (x6H)	&	6	F	V	f	v			Š	¶	Æ	Ö	æ	ö
0111 (x7H)	'	7	G	W	g	w			§	·	Ç	×	ç	÷
1000 (x8H)	(	8	H	X	h	x			š	z	È	Ø	è	ø
1001 (x9H)	)	9	I	Y	i	y			©	¹	É	Ù	é	ù
1010 (xAH)	*	:	J	Z	j	z			ª	º	Ê	Ú	ê	ú
1011 (xBH)	+	;	K	[	k	{			«	»	Ë	Û	ë	û
1100 (xCH)	,	<	L	\	l	|			¬	Œ	Ì	Ü	ì	ü
1101 (xDH)	-	=	M	]	m	}			-	œ	Í	Ý	í	ý
1110 (xEH)	.	>	N	^	n	~			®	Ÿ	Î	Þ	î	þ
1111 (xFH)	/	?	O	_	o				¯	¿	Ï	ß	ï	ÿ

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to “American.”

4 The blank space (20H, 7FH, A0H) indicates a space code.

5 8xH and 9xH are ignored. (Shaded areas)

6.2.1.10 International character set table

ESC R n		Country	23	24	26	40	4F	5B	5C	5D	5E	5F	60	7B	7C	7D	7E
0	(00)H	American	#	$	&	@	O	[	\	]	^	_	‘	{		}	~
1	(01)H	French	#	$	&	à	O	°	ç	§	^	_	`	é	ù	è	¨
2	(02)H	German	#	$	&	§	O	Ä	Ö	Ü	^	_	`	ä	ö	ü	ß
3	(03)H	British	£	$	&	@	O	[	\	]	^	_	`	{		}	~
4	(04)H	Danish I	#	$	&	@	O	Æ	Ø	Å	^	_	`	æ	ø	å	~
5	(05)H	Swedish	#	¤	&	É	O	Ä	Ö	Å	Ü	_	é	ä	ö	å	ü
6	(06)H	Italian	#	$	&	@	O	°	\	é	^	_	ù	à	ò	è	ì
7	(07)H	Spanish I	Pt	$	&	@	O	i	Ñ	¿	^	_	`	¨	ñ	}	~
8	(08)H	Japanese	#	$	&	@	O	[	¥	]	^	_	`	{		}	~
9	(09)H	Norwegian	#	¤	&	É	O	Æ	Ø	Å	Ü	_	é	æ	ø	å	ü
10	(0A)H	Danish II	#	$	&	É	O	Æ	Ø	Å	Ü	_	é	æ	ø	å	ü
11	(0B)H	Spanish II	#	$	&	á	O	i	Ñ	¿	é	_	`	í	ñ	ó	ú
12	(0C)H	Latin American	#	$	&	á	O	i	Ñ	¿	é	_	ü	í	ñ	ó	ú
13	(0D)H	French Canadian	ü	$	ë	à	Ø	â	ç	ê	î	ï	ô	é	ù	è	û
14	(0E)H	Dutch	£	$	&	@	O	[	IJ	]	^	_	`	{	ij	}	~
64	(40)H	Publisher	#	$	&	§	O	°	'	"	¶	_	`	©	®	†	™

6.2.2 Code table (OKI — Standard Type)

The character code tables follow.

6.2.2.1 USA

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
0001 (x1H)	!	1	A	Q	a	q	ü	æ	í	▒	┴	╤	ß	±
0010 (x2H)	"	2	B	R	b	r	é	Æ	ó	▓	┬	╥	Γ	≥
0011 (x3H)	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
0100 (x4H)	$	4	D	T	d	t	ä	ö	ñ	┤	─	╘	Σ	⌠
0101 (x5H)	%	5	E	U	e	u	à	ò	Ñ	╡	┼	╒	σ	⌡
0110 (x6H)	&	6	F	V	f	v	å	û	ª	╢	╞	╓	µ	÷
0111 (x7H)	'	7	G	W	g	w	ç	ù	º	╖	╟	╫	τ	≈
1000 (x8H)	(	8	H	X	h	x	ê	ÿ	¿	╕	╚	╪	Φ	°
1001 (x9H)	)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┘	Θ	•
1010 (xAH)	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
1011 (xBH)	+	;	K	[	k	{	ï	¢	½	╗	╦	■	δ	√
1100 (xCH)	,	<	L	\	l	|	î	£	¼	╝	╠	■	∞	n
1101 (xDH)	−	=	M	]	m	}	ì	¥	¡	╜	═	▌	∅	²
1110 (xEH)	.	>	N	^	n	~	Ä	₧	«	╛	╬	▐	ε	■
1111 (xFH)	/	?	O	_	o		Å	ƒ	»	┐	╧	▀	∩	

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to “American.”

4 The blank space (20H, 7FH, FFH) indicates a space code.

6.2.2.2 Canada-French

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p	Ç	É	¦	▒	└	╨	α	≡
0001 (x1H)	!	1	A	Q	a	q	ü	È	´	▓	┴	╤	ß	±
0010 (x2H)	"	2	B	R	b	r	é	Ê	ó	▉	┬	╥	Γ	≥
0011 (x3H)	#	3	C	S	c	s	â	ô	ú	▏	├	╙	π	≤
0100 (x4H)	$	4	D	T	d	t	Â	Ë	··	┤	─	╘	Σ	⌠
0101 (x5H)	%	5	E	U	e	u	à	Ï	¸	╡	┼	╒	σ	⌡
0110 (x6H)	&	6	F	V	f	v	¶	û	³	╢	╞	╓	µ	÷
0111 (x7H)	'	7	G	W	g	w	ç	ù	¯	╖	╟	╫	τ	≈
1000 (x8H)	(	8	H	X	h	x	ê	¤	Î	╕	╚	╪	Φ	°
1001 (x9H)	)	9	I	Y	i	y	ë	Ô	⌐	╣	╔	┘	Θ	•
1010 (xAH)	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
1011 (xBH)	+	;	K	[	k	{	ï	¢	½	╗	╦	▉	δ	√
1100 (xCH)	,	<	L	\	l	|	î	£	¼	╝	╠	▄	∞	n
1101 (xDH)	-	=	M	]	m	}	_	Ù	¾	╜	═	▌	ø	²
1110 (xEH)	.	>	N	^	n	~	À	Û	«	╛	╬	▐	ε	■
1111 (xFH)	/	?	O	_	o		§	ƒ	»	┐	╧	▀	∩	

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to "American."

4 The blank space (20H, 7FH, FFH) indicates a space code.

6.2.2.3 Multilingual

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p	Ç	É	á	▒	└	ð	Ó	—
0001 (x1H)	!	1	A	Q	a	q	ü	æ	í	▒	┴	Ð	ß	±
0010 (x2H)	"	2	B	R	b	r	é	Æ	ó	▓	┬	Ê	Ô	‗
0011 (x3H)	#	3	C	S	c	s	â	ô	ú	│	├	Ë	Ò	¾
0100 (x4H)	$	4	D	T	d	t	ä	ö	ñ	┤	─	È	õ	¶
0101 (x5H)	%	5	E	U	e	u	à	ò	Ñ	Á	┼	ı	Õ	§
0110 (x6H)	&	6	F	V	f	v	å	û	ª	Â	ã	Í	µ	÷
0111 (x7H)	'	7	G	W	g	w	ç	ù	º	À	Ã	Î	þ	¸
1000 (x8H)	(	8	H	X	h	x	ê	ÿ	¿	©	╚	Ï	Þ	°
1001 (x9H)	)	9	I	Y	i	y	ë	Ö	®	╣	╔	┘	Ú	¨
1010 (xAH)	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Û	·
1011 (xBH)	+	;	K	[	k	{	ï	ø	½	╗	╦	█	Ù	1
1100 (xCH)	,	<	L	\	l	|	î	£	¼	╝	╠	▄	ý	3
1101 (xDH)	−	=	M	]	m	}	ì	Ø	¡	¢	═	¦	Ý	2
1110 (xEH)	.	>	N	^	n	~	Ä	×	«	¥	╬	Ì	¯	■
1111 (xFH)	/	?	O	_	o	⌫	Å	ƒ	»	┐	☼	▄	´	

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to “American.”

4 The blank space (20H, 7FH, FFH) indicates a space code.

6.2.2.4 Portugal

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
0001 (x1H)	!	1	A	Q	a	q	ü	À	í	▒	┴	╤	ß	±
0010 (x2H)	"	2	B	R	b	r	é	È	ó	▓	┬	╥	Γ	≥
0011 (x3H)	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
0100 (x4H)	$	4	D	T	d	t	ã	õ	ñ	┤	─	╘	Σ	⌠
0101 (x5H)	%	5	E	U	e	u	à	ò	Ñ	╡	┼	╒	σ	⌡
0110 (x6H)	&	6	F	V	f	v	Á	Ú	ª	╢	╞	╓	µ	÷
0111 (x7H)	'	7	G	W	g	w	ç	ù	º	╖	╟	╫	τ	≈
1000 (x8H)	(	8	H	X	h	x	ê	Ì	¿	╕	╚	╪	Φ	°
1001 (x9H)	)	9	I	Y	i	y	Ê	Õ	Ò	╣	╔	┘	Θ	•
1010 (xAH)	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
1011 (xBH)	+	;	K	[	k	{	Í	¢	½	╗	╦	█	δ	√
1100 (xCH)	,	<	L	\	l	|	Ô	£	¼	╝	╠	▄	∞	n
1101 (xDH)	-	=	M	]	m	}	ì	Ù	¡	╜	═	▌	ø	²
1110 (xEH)	.	>	N	^	n	~	Ã	₧	«	╛	╬	▐	ε	■
1111 (xFH)	/	?	O	_	o	⌂	Â	Ó	»	┐	╧	▀	∩	

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to "American."

4 The blank space (20H, 7FH, FFH) indicates a space code.

6.2.2.5 Norway

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
0001 (x1H)	!	1	A	Q	a	q	ü	æ	í	▓	┴	╤	ß	±
0010 (x2H)	"	2	B	R	b	r	é	Æ	ó	■	┬	╥	Γ	≥
0011 (x3H)	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
0100 (x4H)	$	4	D	T	d	t	ä	ö	ñ	┤	─	╘	Σ	⌠
0101 (x5H)	%	5	E	U	e	u	à	ò	Ñ	╡	┼	╒	σ	⌡
0110 (x6H)	&	6	F	V	f	v	å	û	ª	╢	╞	╓	µ	÷
0111 (x7H)	'	7	G	W	g	w	ç	ù	º	╖	╟	╫	τ	≈
1000 (x8H)	(	8	H	X	h	x	ê	ÿ	¿	╕	╚	╪	Φ	°
1001 (x9H)	)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┘	Θ	•
1010 (xAH)	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
1011 (xBH)	+	;	K	[	k	{	ï	ø	½	╗	╦	█	δ	√
1100 (xCH)	,	<	L	\	l	|	î	£	¼	╝	╠	▄	∞	n
1101 (xDH)	-	=	M	]	m	}	ì	Ø	¡	╜	═	▌	ø	²
1110 (xEH)	.	>	N	^	n	~	Ä	Pt	«	╛	╬	▐	ε	■
1111 (xFH)	/	?	O	_	o		Å	ƒ	¤	┐	╧	▀	∩	

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to “American.”

4 The blank space (20H, 7FH, FFH) indicates a space code.

6.2.2.6 BRASCII

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p				°	À	Ð	à	ð
0001 (x1H)	!	1	A	Q	a	q			¡	±	Á	Ñ	á	ñ
0010 (x2H)	"	2	B	R	b	r			¢	²	Â	Ò	â	ò
0011 (x3H)	#	3	C	S	c	s			£	³	Ã	Ó	ã	ó
0100 (x4H)	$	4	D	T	d	t			¤	´	Ä	Ô	ä	ô
0101 (x5H)	%	5	E	U	e	u			¥	µ	Å	Õ	å	õ
0110 (x6H)	&	6	F	V	f	v			¦	¶	Æ	Ö	æ	ö
0111 (x7H)	'	7	G	W	g	w			§	·	Ç	Œ	ç	œ
1000 (x8H)	(	8	H	X	h	x			¨	¸	È	Ø	è	ø
1001 (x9H)	)	9	I	Y	i	y			©	¹	É	Ù	é	ù
1010 (xAH)	*	:	J	Z	j	z			ª	º	Ê	Ú	ê	ú
1011 (xBH)	+	;	K	[	k	{			«	»	Ë	Û	ë	û
1100 (xCH)	,	<	L	\	l	|			¬	¼	Ì	Ü	ì	ü
1101 (xDH)	-	=	M	]	m	}			-	½	Í	Ý	í	ý
1110 (xEH)	.	>	N	^	n	~			®	¾	Î	Þ	î	þ
1111 (xFH)	/	?	O	_	o				¯	¿	Ï	ß	ï	ÿ

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to "American."

4 The blank space (20H, 7FH, A0H) indicates a space code.

5 8xH and 9xH are ignored. (Shaded areas)

6.2.2.7 Abicomp

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p				Ò	¡	ò		
0001 (x1H)	!	1	A	Q	a	q			À	Ó	à	ó		
0010 (x2H)	"	2	B	R	b	r			Á	Ô	á	ô		
0011 (x3H)	#	3	C	S	c	s			Â	Õ	â	õ		
0100 (x4H)	$	4	D	T	d	t			Ã	Ö	ã	ö		
0101 (x5H)	%	5	E	U	e	u			Ä	Œ	ä	œ		
0110 (x6H)	&	6	F	V	f	v			Ç	Ù	ç	ù		
0111 (x7H)	'	7	G	W	g	w			È	Ú	è	ú		
1000 (x8H)	(	8	H	X	h	x			É	Û	é	û		
1001 (x9H)	)	9	I	Y	i	y			Ê	Ü	ê	ü		
1010 (xAH)	*	:	J	Z	j	z			Ë	Ÿ	ë	ÿ		
1011 (xBH)	+	;	K	[	k	{			Ì	¨	ì	ß		
1100 (xCH)	,	<	L	\	l	|			Í	£	í	ª		
1101 (xDH)	–	=	M	]	m	}			Î	•	î	º		
1110 (xEH)	.	>	N	^	n	~			Ï	§	ï	¿		
1111 (xFH)	/	?	O	_	o				Ñ	º	ñ	±		

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to “American.”

4 The blank space (20H, 7FH, A0H) indicates a space code.

5 8xH, 9xH, ExH, and FxH are ignored. (Shaded areas)

6.2.2.8 Multilingual 858

B_7 B_6 B_5 B_4 B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p	Ç	É	á	▒	└	ð	Ó	—
0001 (x1H)	!	1	A	Q	a	q	ü	æ	í	▓	┴	Ð	ß	±
0010 (x2H)	"	2	B	R	b	r	é	Æ	ó	▉	┬	Ê	Ô	‗
0011 (x3H)	#	3	C	S	c	s	â	ô	ú	┃	├	Ë	Ò	¾
0100 (x4H)	$	4	D	T	d	t	ä	ö	ñ	┤	─	È	õ	¶
0101 (x5H)	%	5	E	U	e	u	à	ò	Ñ	Á	┼	□	Õ	§
0110 (x6H)	&	6	F	V	f	v	å	û	ª	Â	ã	Í	µ	÷
0111 (x7H)	'	7	G	W	g	w	ç	ù	º	À	Ã	Î	þ	¸
1000 (x8H)	(	8	H	X	h	x	ê	ÿ	¿	©	╚	Ï	Þ	°
1001 (x9H)	)	9	I	Y	i	y	ë	Ö	®	╣	╔	┘	Ú	··
1010 (xAH)	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Û	·
1011 (xBH)	+	;	K	[	k	{	ï	ø	½	╗	╦	▉	Ù	1
1100 (xCH)	,	<	L	\	l	|	î	£	¼	╝	╠	▄	ý	3
1101 (xDH)	-	=	M	]	m	}	ì	Ø	¡	¢	═	¦	Ý	2
1110 (xEH)	.	>	N	^	n	~	Ä	×	«	¥	╬	Ì	¯	▄
1111 (xFH)	/	?	O	_	o		Å	ƒ	»	┐	¤	▄	´	

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to "American."

4 The blank space (20H, 7FH, FFH) indicates a space code.

6.2.2.9 ISO 8859/15

B_7 B_6 B_5 B_4 / B_3 B_2 B_1 B_0	0010 (2xH)	0011 (3xH)	0100 (4xH)	0101 (5xH)	0110 (6xH)	0111 (7xH)	1000 (8xH)	1001 (9xH)	1010 (AxH)	1011 (BxH)	1100 (CxH)	1101 (DxH)	1110 (ExH)	1111 (FxH)
0000 (x0H)		0	@	P	`	p				°	À	Ð	à	ð
0001 (x1H)	!	1	A	Q	a	q			¡	±	Á	Ñ	á	ñ
0010 (x2H)	"	2	B	R	b	r			¢	²	Â	Ò	â	ò
0011 (x3H)	#	3	C	S	c	s			£	³	Ã	Ó	ã	ó
0100 (x4H)	$	4	D	T	d	t			?	Z	Ä	Ô	ä	ô
0101 (x5H)	%	5	E	U	e	u			¥	µ	Å	Õ	å	õ
0110 (x6H)	&	6	F	V	f	v			Š	¶	Æ	Ö	æ	ö
0111 (x7H)	'	7	G	W	g	w			§	·	Ç	×	ç	÷
1000 (x8H)	(	8	H	X	h	x			š	z	È	Ø	è	ø
1001 (x9H)	)	9	I	Y	i	y			©	¹	É	Ù	é	ù
1010 (xAH)	*	:	J	Z	j	z			ª	º	Ê	Ú	ê	ú
1011 (xBH)	+	;	K	[	k	{			«	»	Ë	Û	ë	û
1100 (xCH)	,	<	L	\	l	|			¬	Œ	Ì	Ü	ì	ü
1101 (xDH)	-	=	M	]	m	}			-	œ	Í	Ý	í	ý
1110 (xEH)	.	>	N	^	n	~			®	Ÿ	Î	Þ	î	þ
1111 (xFH)	/	?	O	_	o				¯	¿	Ï	ß	ï	ÿ

1 0xH and 1xH are Control Code areas.

2 If a code received is other than a control code in 0xH and 1xH, it is ignored.

3 The above table assumes international character set is set to “American.”

4 The blank space (20H, 7FH, A0H) indicates a space code.

5 8xH and 9xH are ignored. (Shaded areas)

6.2.2.10 International character set table

ESC R n		Country	23	24	26	40	4F	5B	5C	5D	5E	5F	60	7B	7C	7D	7E
0	(00)H	American	#	$	&	@	O	[	\	]	^	_	‘	{		}	~
1	(01)H	French	#	$	&	à	O	º	ç	§	^	_	`	é	ù	è	¨
2	(02)H	German	#	$	&	§	O	Ä	Ö	Ü	^	_	`	ä	ö	ü	ß
3	(03)H	British	£	$	&	@	O	[	\	]	^	_	`	{		}	~
4	(04)H	Danish I	#	$	&	@	O	Æ	Ø	Å	^	_	`	æ	ø	å	~
5	(05)H	Swedish	#	¤	&	É	O	Ä	Ö	Å	Ü	_	é	ä	ö	å	ü
6	(06)H	Italian	#	$	&	@	O	º	\	é	^	_	ù	à	ò	è	ì
7	(07)H	Spanish I	Pt	$	&	@	O	i	Ñ	¿	^	_	`	¨	ñ	}	~
8	(08)H	Japanese	#	$	&	@	O	[	¥	]	^	_	`	{		}	~
9	(09)H	Norwegian	#	¤	&	É	O	Æ	Ø	Å	Ü	_	é	æ	ø	å	ü
10	(0A)H	Danish II	#	$	&	É	O	Æ	Ø	Å	Ü	_	é	æ	ø	å	ü
11	(0B)H	Spanish II	#	$	&	á	O	i	Ñ	¿	é	_	`	í	ñ	ó	ú
12	(0C)H	Latin American	#	$	&	á	O	i	Ñ	¿	é	_	ü	í	ñ	ó	ú
13	(0D)H	French Canadian	ü	$	ë	à	Ø	â	ç	ê	î	ï	ô	é	ù	è	û
14	(0E)H	Dutch	£	$	&	@	O	[	IJ	]	^	_	`	{	ij	}	~
64	(40)H	Publisher	#	$	&	§	O	º	'	"	¶	_	`	©	®	†	™

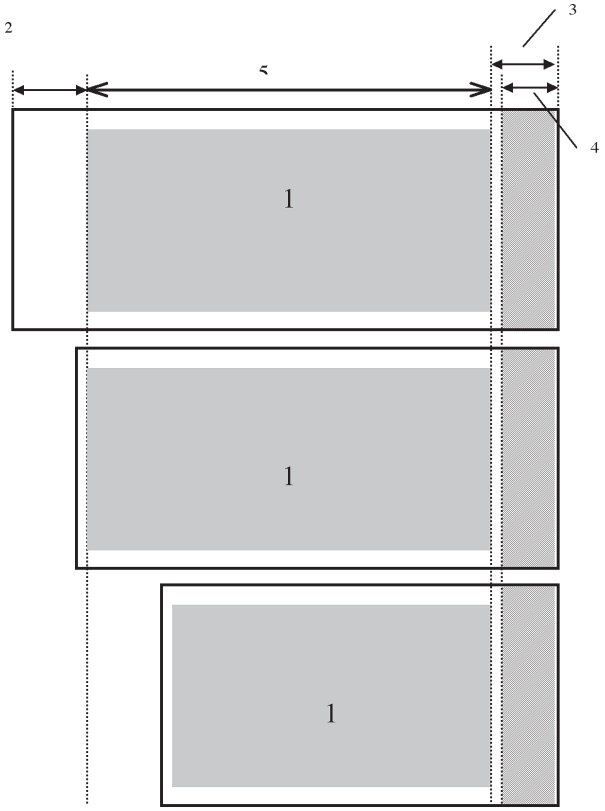
7. Using the Unitool Printer Driver

7.1 Setting Slip Paper in the Paper Tray

This section describes the method to set Slip paper in the input bin. With this printer, the position of the Paper Guide can be adjusted sideways, enabling you to change the paper setting position. If you use this printer driver, however, follow the procedure below when determining the right/left margins for paper and the position to set the Slip paper. Some examples and cautionary notes for use are provided below.

In normal operation, push the Paper Guide for Slip toward the right against the Slip Tray when using this printer driver. (Slide the Paper Guide toward the left as needed, to change the printing area on the paper. For more details, refer to "7.1.1 Using Registered Paper Icons.")

The first 25.4 mm (1.0") along the right side of the paper is not printable; therefore, set the right margin at 27.94 mm (1.1") or more in normal operation. This printing area is outlined below.



1 Printing area
2 Left Margin 2.54mm [0.1 inch] or more
3 Right Margin 27.94mm [1.1 inch] or more
4 Printing disabled area 25.4mm [1.0 inch]
5 Printable Maximum Width 160.02mm [6.3 inch]

The maximum printable width per line with Slip paper is 160.02mm(6.3").

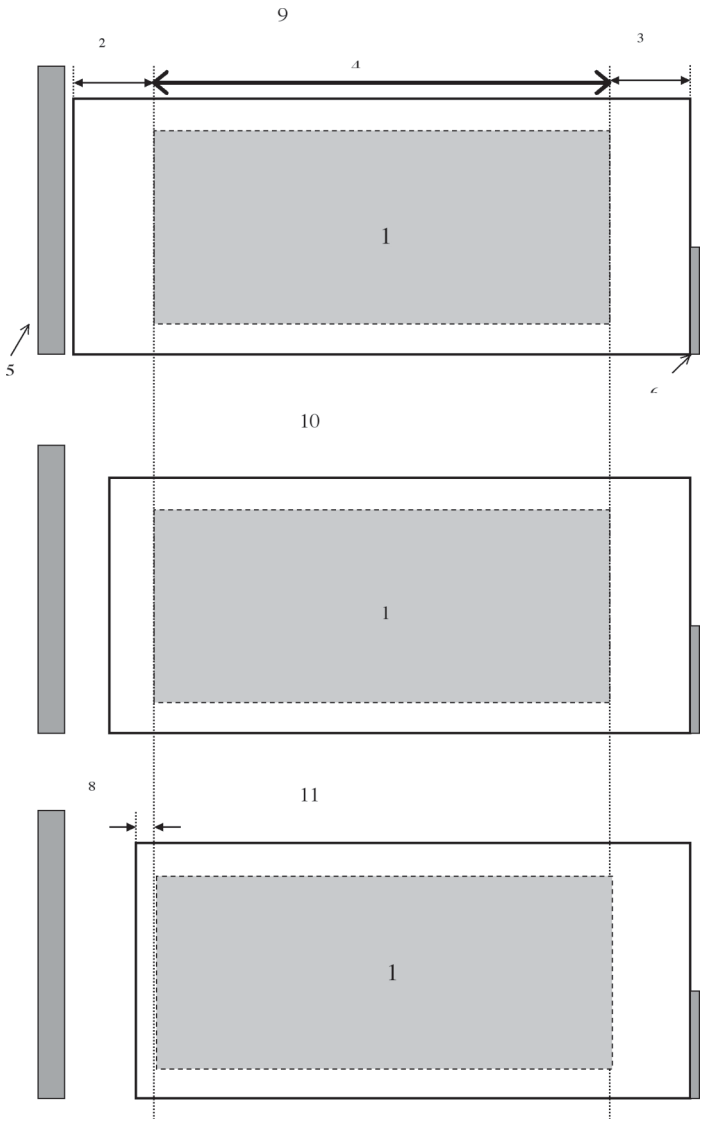
The following two types of paper are usable for Slip.

- Paper sizes that are registered as an Icon in Paper Properties/Paper Tab/Paper Size.
- Custom Size

As each paper size is used differently, refer to the various paper setups described in 7.4 and after.

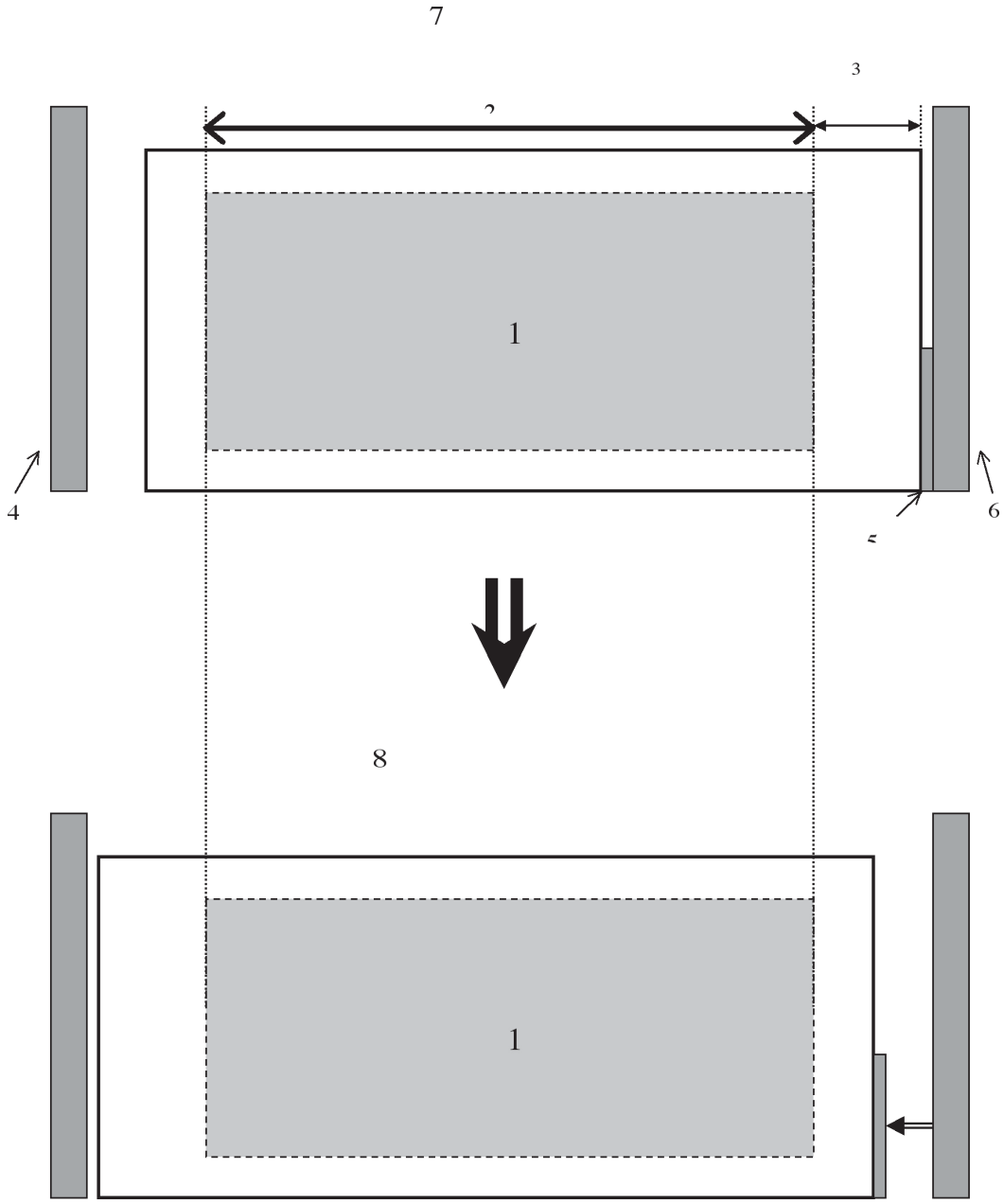
7.1.1 Using Registered Paper Icons

1 Paper width is 190.5 mm (7.5") or more and up to 215.9 mm (8.5") inclusive.



1 Printing area
2 Left Margin 27.94mm (1.1 inch)
3 Right Margin 27.94mm (1.1 inch)
4 Printable Maximum Width 160.02mm (6.3 inch)
5 Slip Tray Left Side
6 Paper Guide
7 Slip Tray Right Side
8 Left Margin 2.54mm (0.1 inch)
9 Paper Width = 215.9 mm (8.5")
10 190.5 mm (7.5") ≤ Paper Width ≤ 215.9 mm (8.5")
11 Paper Width = 190.5 mm (7.5")

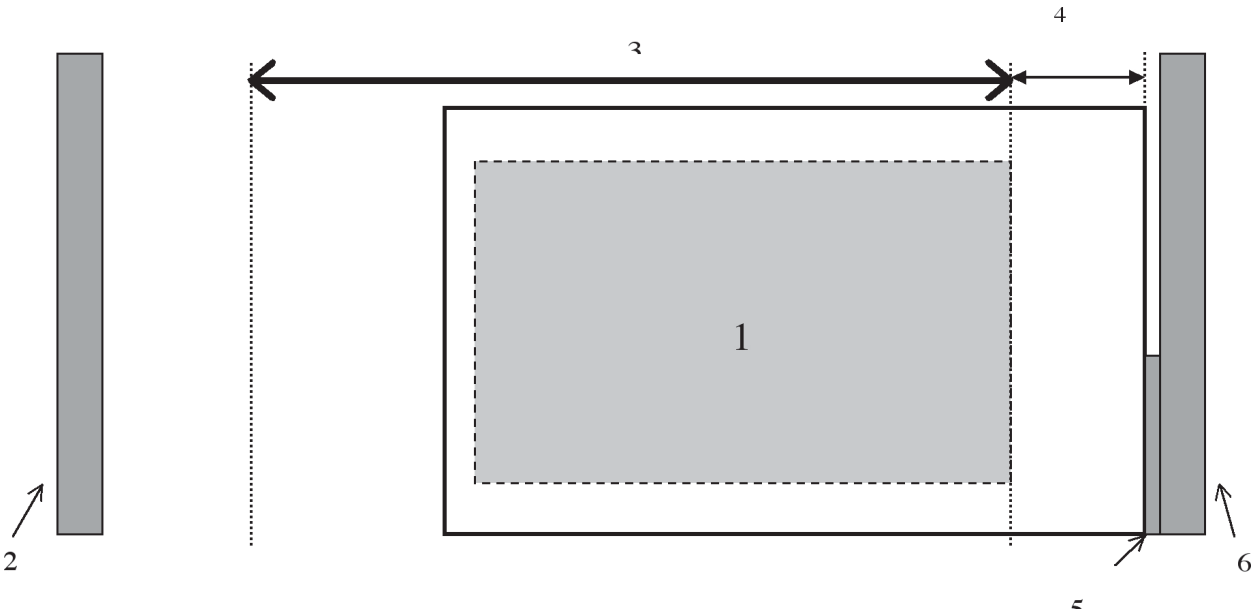
For paper that is 190.5 mm (7.5") or more and less than 215.9 mm (8.5"), slide the Paper Guide toward the left as needed so that the entire printing area on the paper shifts toward the right, as illustrated below.



1 Printing area
2 Printable Maximum Width 160.02mm (6.3 inch)
3 Right Margin 27.94mm (1.1 inch)
4 Slip Tray Left Side
5 Paper Guide
6 Slip Tray Right Side
7 Normal operation
8 Paper Guide shifted toward the left.

2 Paper Width is less than 190.5 mm (7.5").

The printing area, when printing paper that is less than 190.5mm (7.5") in width, is illustrated below. For paper 190.5 mm (7.5") or more and less than 215.9 mm (8.5"), slide the Paper Guide toward the left as needed so that the entire printing area on the paper shifts toward the right.



1 Printing area
2 Slip Tray Left Side
3 Printable Maximum Width 160.02mm (6.3 inch)
4 Right Margin 27.94mm (1.1 inch)
5 Paper Guide
6 Slip Tray Right Side

7.1.2 Using Custom Size

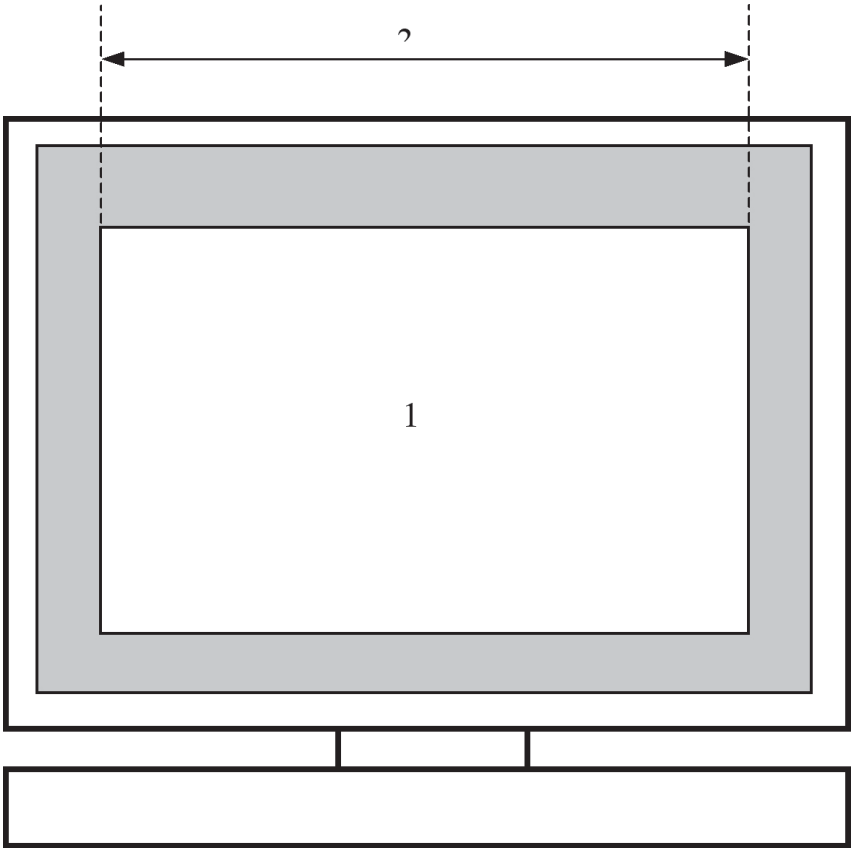
Custom Size is variable in width in the range of 187.96 mm (7.4") - 215.9 mm (8.5").

7.1.2.1 Using Paper Size that is less than 187.96 mm (7.4") in Width

To adjust the left and right margins and create data for a paper size you want to use, follow the procedure below.

1 Set the length of paper to use in the Custom Size Setup dialog. (The width is fixed at 187.96 mm [7.4"].)

2 Open an application you want to use and customize your paper at Custom Size on the Page Setup menu.



1 Paper Size when using Custom Size

2 Paper Size 187.96mm (7.4 inch)

3 Set the margins you want within the specified range at Margins on the Page Setup menu.

Example

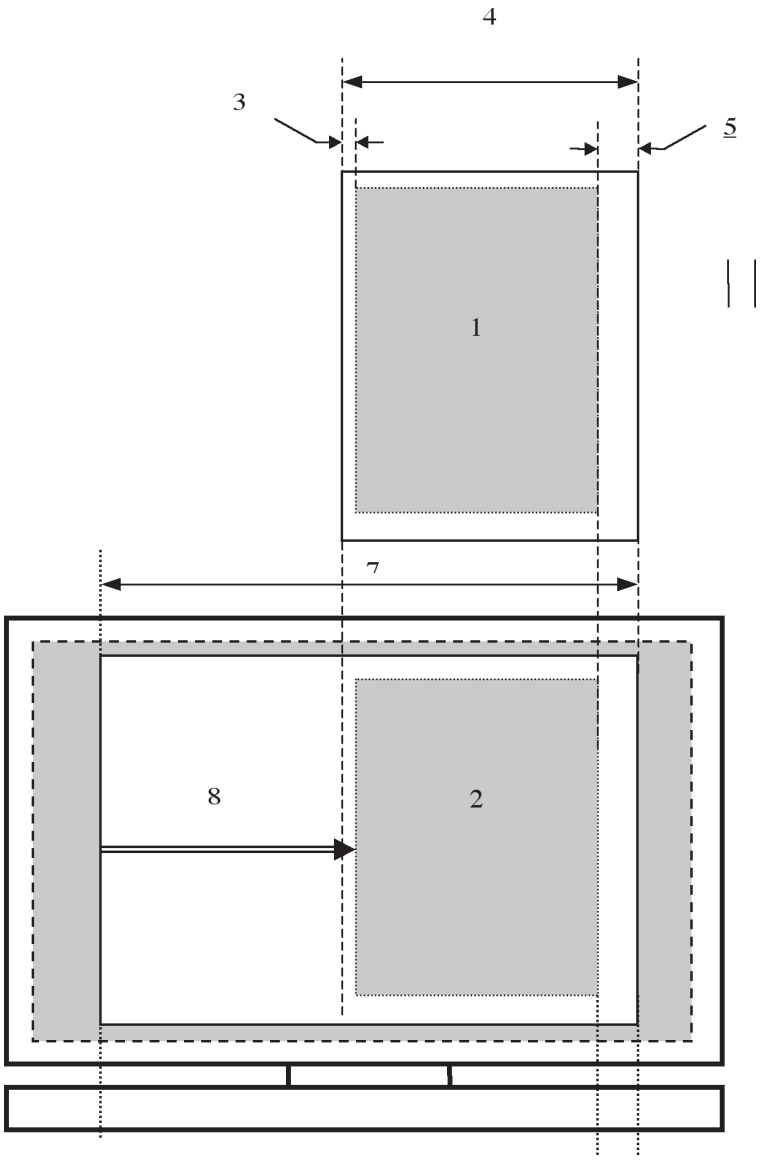
The left margin that is actually set up for using 101.6 mm (4.0") paper can be calculated according to the following formula.

(Width of Custom Paper Size fixed) - (Width of paper size actually used) + (Left Margin for paper used)

187.96 mm (7.4") - 101.6 mm (4.0") + 2.54 mm (0.1") or more

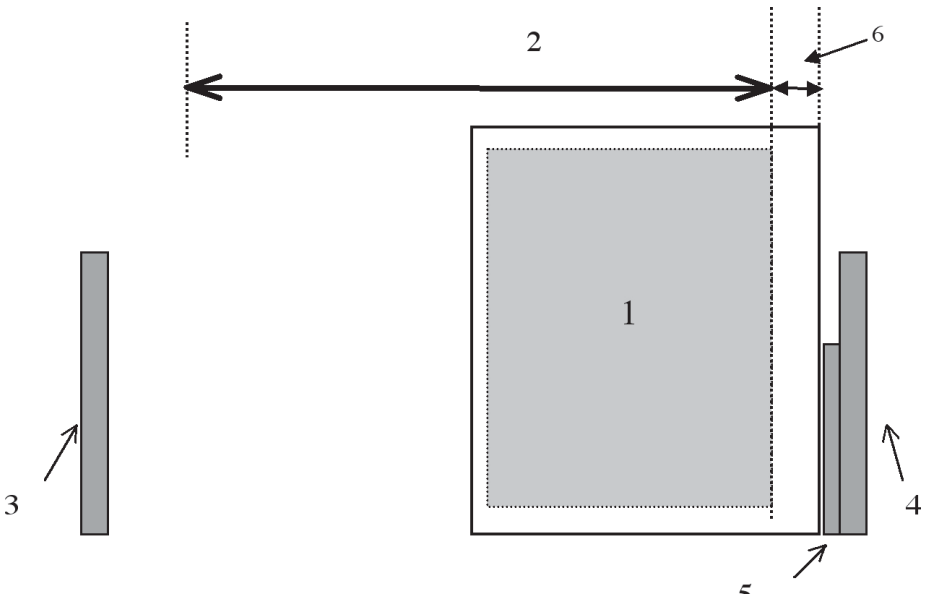
Set the right margin at 27.94 mm (1.1") (Printing disabled area 25.4 mm [1.0"] + Slip paper's minimum right margin 2.54 mm [0.1"]) or more.

Image of actual printing area



1 Target Printing Area
2 Printing Area with margin adjusted
3 Left margin for paper to be used 2.54mm (0.1 inch) or more
4 Width of Paper Size actually used 101.6mm (4.0 inch)
5 Right margin for paper to be used 25.4mm (1.1 inch) or more (including the printing disabled area)
6 Right margin actually set
7 Paper Size 187.96mm (7.4 inch)
8 Left margin actually set

4 With the Paper Guide pushed to the right, insert 101.6 mm (4.0")-wide paper to print.



1 Target Printing Area
2 Printable Maximum Width 160.02mm (6.3 inch)
3 Slip Tray Left Side
4 Slip Tray Right Side
5 Paper Guide
6 Right Margin 27.94mm (1.1 inch) or more

5 When you need to print Custom Size paper (e.g. 101.6 mm (4.0") in its full width, follow the procedure below.
   a Set the length of the paper in the Custom Size Setup dialog. (The width is fixed at 187.96 mm [7.4"].)
   b Open an application you want to use and customize your paper at Custom Size on the Page Setup menu.
   Set the margins you want within the specified range at Margins on the Page Setup menu.

Example

The left margin that is actually set up for using 101.6 mm (4.0") paper can be calculated according to the following formula.

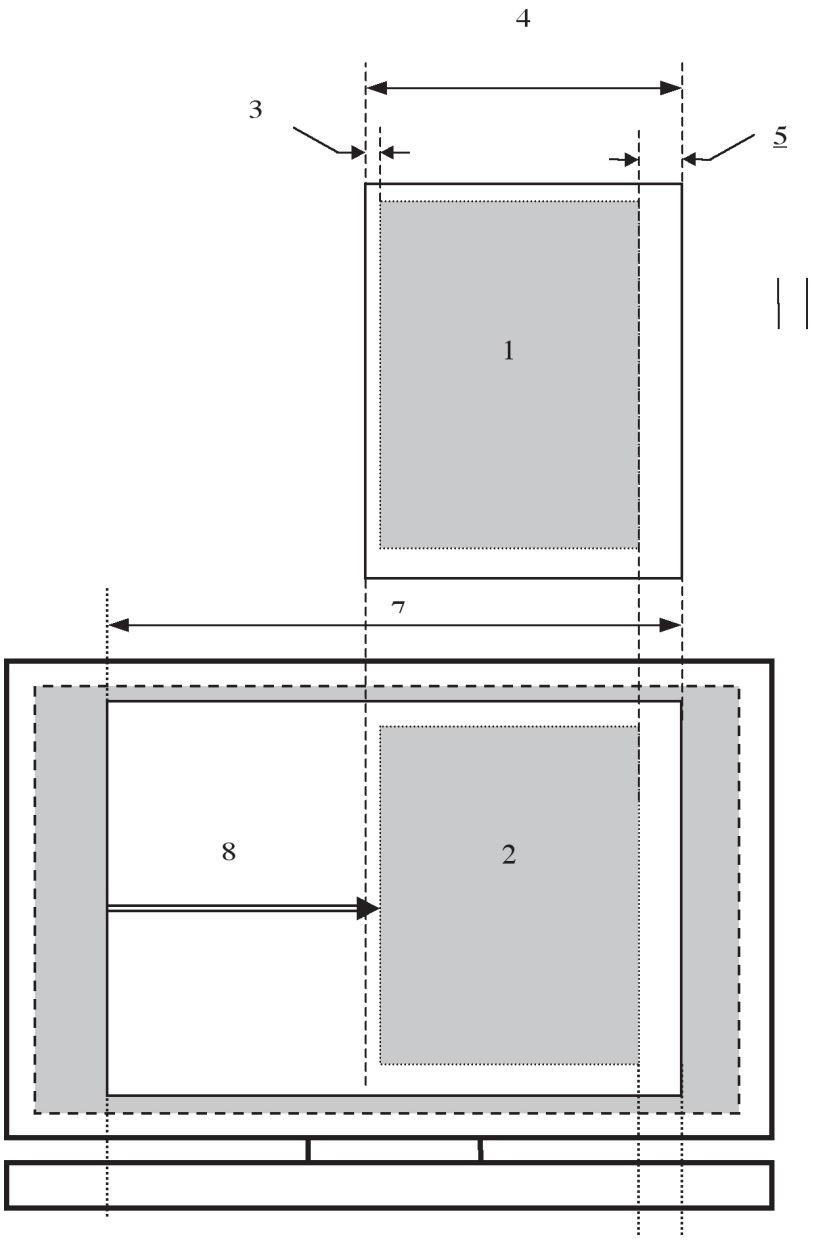
[Width of Custom Paper Size fixed] - [Width of paper size actually used] - [Printing disabled area] + [Left margin for paper used]

187.96 mm (7.4") - 101.6 mm (4.0") - 25.4 mm (1.0") + 2.54 mm (0.1") or more

Set the right margin at 27.94 mm (1.1") (Printing disabled area 25.4 mm [1.0"] + minimum right margin 2.54 mm [0.1"]) or more.

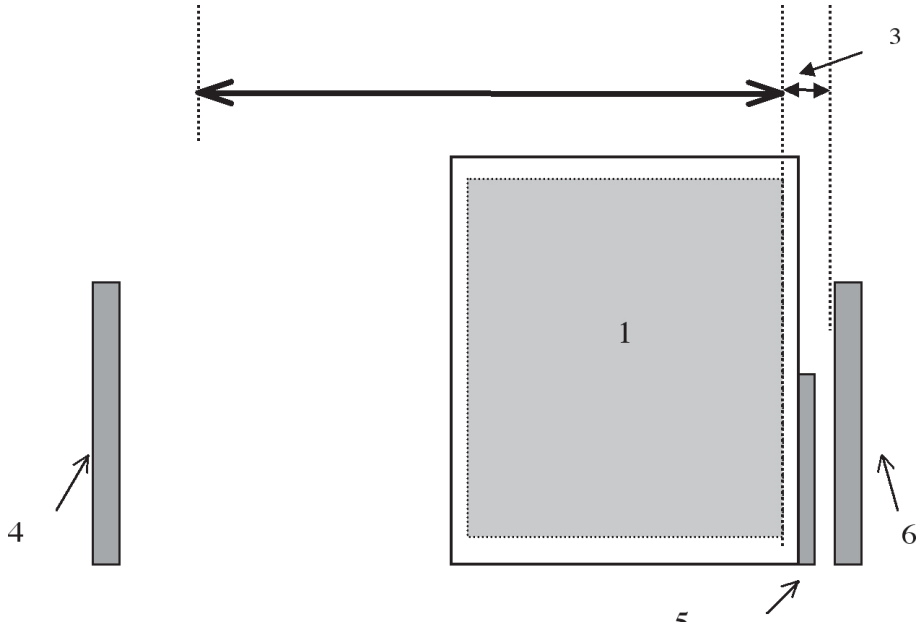
c With the Paper Guide pushed to the left, insert 101.6 mm (4.0")-wide paper to print.

An image of actual printing area



1 Target Printing Area
2 Printing Area with margin adjusted
3 Left margin for paper to be used: 2.54mm (0.1 inch) or more
4 Width of actually used Paper Size 101.6mm (4.0 inch)
5 Right margin for paper to be used: 2.54mm (0.1 inch)
6 Actually set right margin 25.4mm (1.1 inch) or more (including the printing disable area)
7 Paper Size 187.96mm (7.4 inch)
8 Actually set left margin

With Paper Guide pushed to the left, insert 101.6 mm (4.0")-wide paper to print.



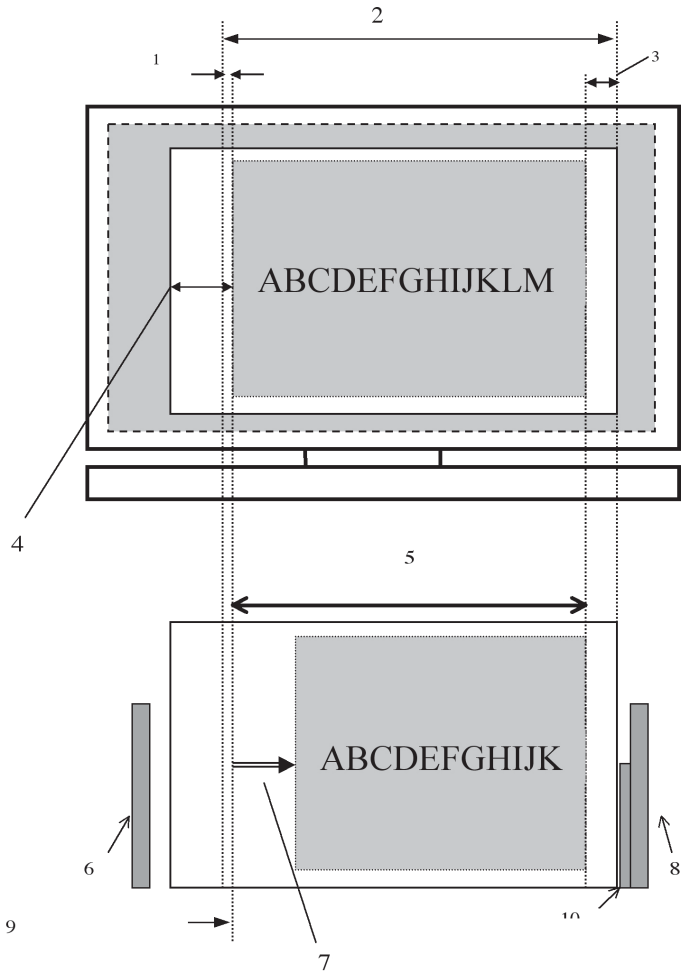
1 Target Printing Area
2 Printable Maximum Width 160.02mm (6.3 inch)
3 Right Margin 27.94mm (1.1 inch)
4 Slip Tray Left Side
5 Paper Guide
6 Slip Tray Right Side

7.1.2.2 Using Paper Size that is 187.96 mm (7.4") or more and less than 215.9 mm (8.5") in width

Custom Size is variable in width in the range of 187.96 mm (7.4") - 215.9 mm (8.5"), but when the designated width is more than 187.96 mm (7.4"), you must take the following points into consideration when creating print data.

The printer's physical printable area is 160.02 mm (6.3").

The value that is set at Left Margin/Page Setup in the application is treated as the distance from the printer's print start position (left edge). In other words, if the value set at Left Margin is greater than 0, the printing area shifts to the right in actual printing by as much as the set value. Therefore, you need to adjust the printing position appropriately by setting the left margin at 0 so that the right edge of the data you want to print does not go beyond the printable area, and also by setting ample distance for the right margin.



1 Minimum left margin
2 Paper Size 187.96mm (7.4 inch)
3 Right Margin 27.94mm (1.1 inch) or more
4 Left margin displayed in application
5 Printable Maximum Width 160.02mm (6.3 inch)
6 Slip Tray Left Side
7 The left margin is reflected in relation to the print start position; thus, the print start position shifts.
8 Slip Tray Right Side
9 Print Start position
10 Paper Guide

7.2 About the Validation Printing Area

This section describes the information for the Validation printing area, and it includes notes for using Validation.

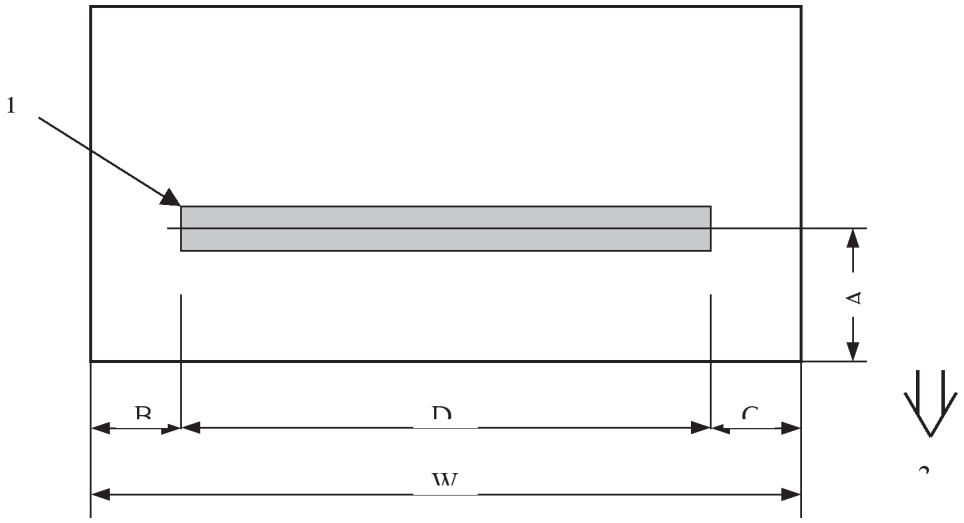
1 In Validation mode, you can use the same paper as in Slip mode, but the printing area is not the same as that of Slip mode.

2 Only 1-line printing is supported. When you need to print multiple lines, use the Slip Driver.

3 Use device fonts in the case of Character printing. However, double-high characters are not supported.

4 Test Page Printing at the time of driver installation and Test Page Printing after the installation is done are supported.

5 Double-high device font characters are not supported by Validation.



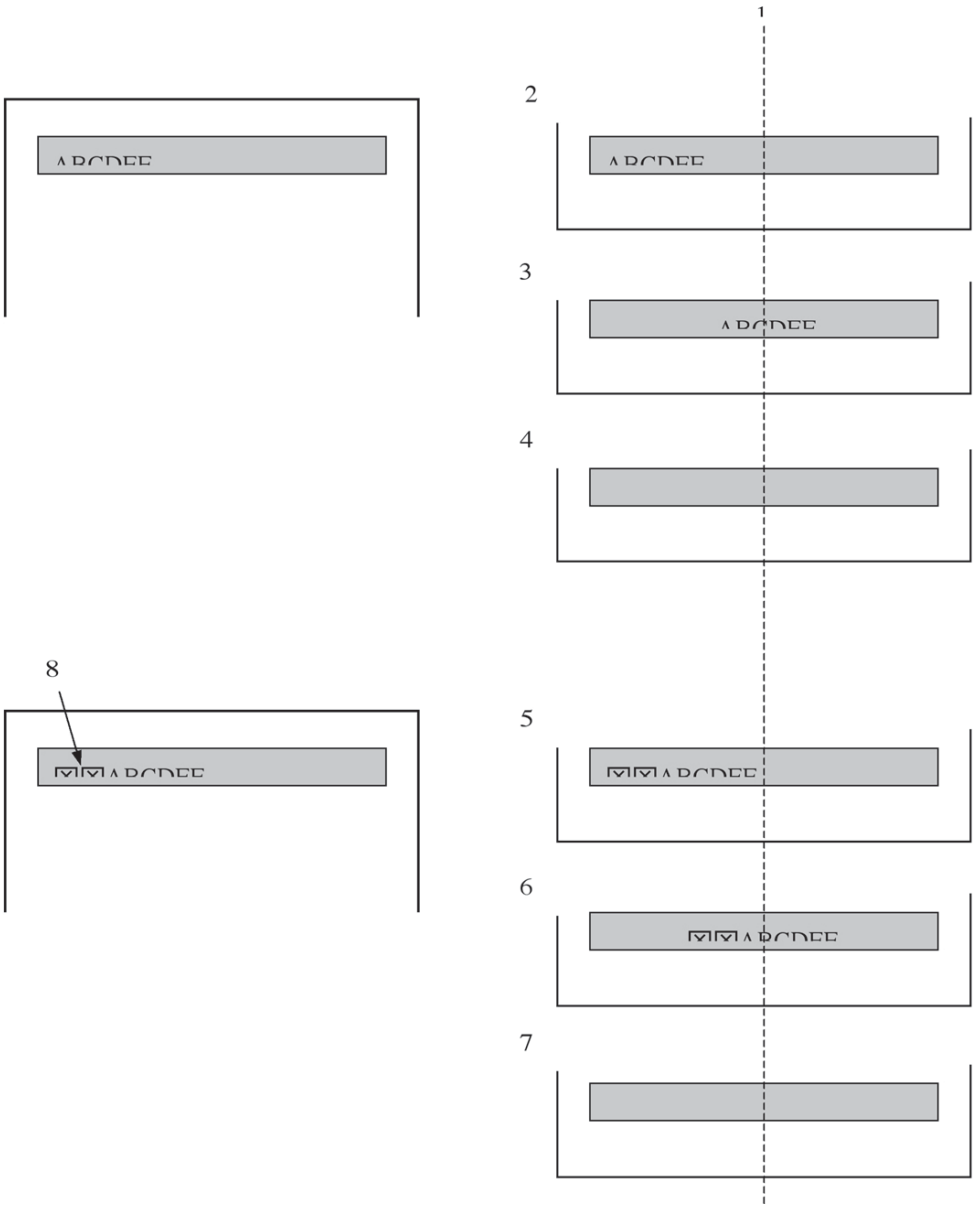
1 Printing Area

2 Inserting Direction

Symbol	Designation	Standard Value
W	Paper width	70 mm (2.7") or more
A	Print starting position	8 mm (0.7") or less
B	Left margin	2.54 mm (0.1") or more
C	Right margin	2.54 mm (0.1")
D	Printing area width	Max 160.02 mm(6.3")

6 The following shows examples of print data created in Windows applications in each Paper source (L_Alignment/Center/R_Alignment).

Data in application **Print result**



1 Center Line
2 (L_Alignment is used)
3 (Center is used)
4 (R_Alignment is used)
5 (L_Alignment is used)
6 (Center is used)
7 (R_Alignment is used)
8 When spaces are inserted (x x : space)

7 Basically, the concept of setting the printing area in the horizontal direction and the margins for Custom paper is the same as for Slip, except for the following.

Custom Size is variable in width in the range of 162.56 mm (6.4") - 215.9 mm (8.5").

Validation's paper setting position is different from that of Slip, and the minimum Right Margin value is 2.54 mm (0.1").

Set paper size and margins within the specified range for your use.

Also, refer to 7.1 Setting Slip Paper in the Paper Tray.

The procedure for using Custom Size is explained below.

a) Set the length of paper to use in the Custom Size Setup dialog. (The width is constant at 162.56 mm (6.4").)

b) Open an application you want to use and customize your paper at Custom Size on the Page Setup menu.

c) Set the margins as needed within the specified range at Margins on the Page Setup menu.

d) Insert 101.6 mm (4.0")-wide paper to print.

Example

The left margin that is actually set up for using 101.6 mm (4.0") paper can be calculated according to the following formula .

[Width of Custom Paper Size fixed] - [Width of paper size actually used] + [Left margin for paper to be used]

162.56 mm (6.4") - 101.6 mm (4.0") + 2.54 mm (0.1")

Also, set the right margin at the minimum of 2.54 mm (0.1") or more.

7.3 Setting Tractor Paper in the Tractor Unit

This section describes how to set Tractor Paper in the Tractor Unit.

The maximum printable width per line with Tractor paper is 160.02 mm (6.3").

Push the Tractor Paper Guide against the Right Tractor Unit's right edge when using this print driver. (Slide the Paper Guide toward the left as needed to change the printing area on the paper.)

Basically, the concept of setting the printing area in the horizontal direction and the margins for Custom paper is the same as for Slip.

Set paper size and margins within the specified range for your use.

Also, refer to "7.1 Setting Slip Paper in the Paper Tray.

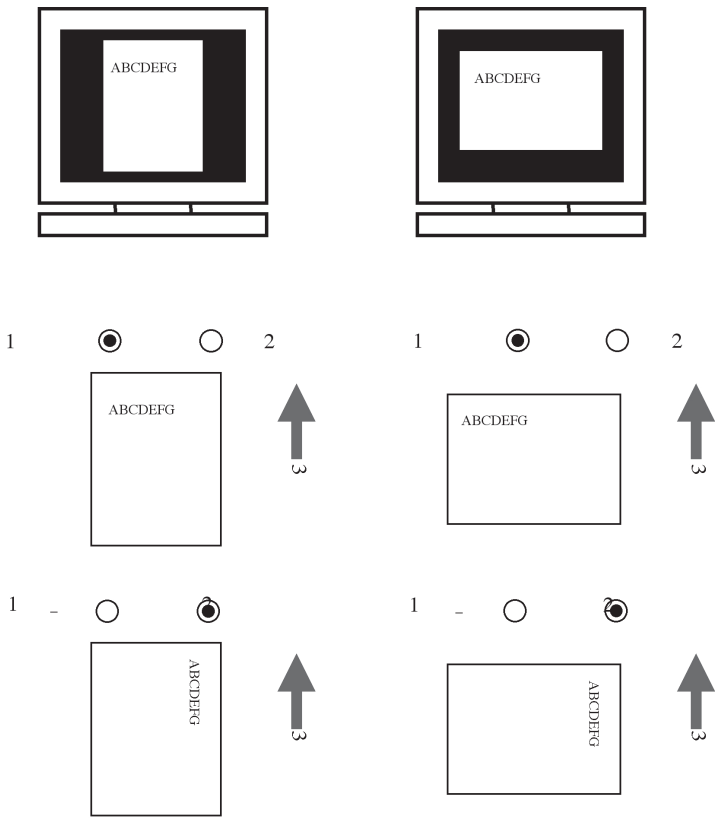
7.4 Orientation

Orientation selections available with this printer driver are described next.

The printer driver switches the document orientation according to the setting made by the user.

When Landscape is designated, the driver rotates the direction 90° clockwise for printing. This rotation is done in Windows; thus, the device font setting is disabled and replaced with the Windows font (True Type Font, etc. currently supported in Windows.)

Printing direction for paper with its narrow side set first	Printing direction for paper with its wide side set first

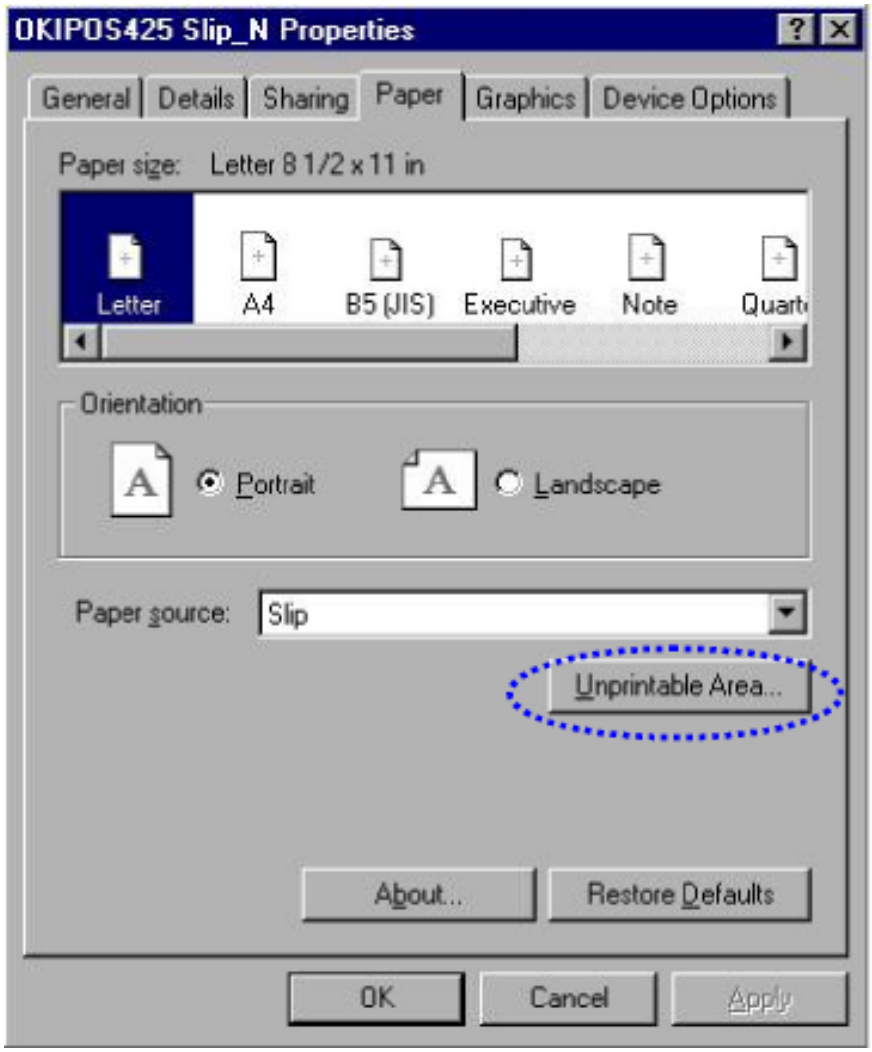


1 Orientation Landscape
2 Portrait
3 Paper feeds

7.5 Special functions of the Windows 98 Version Printer Driver

The following dialog shows the Paper tab of the Windows 98 printer driver.

The Unprintable Area function does not exist in the driver property setting for the NT4 environment. Here is some supplemental explanation.



This setting configures the Unprintable Area of the currently-selected paper. Each margin value is the standard value of the Unprintable Area. The printer driver notifies an application of the Unprintable Area sizes (top/bottom/right/left) that a user has selected/changed.

When the printer's TOF position/paper auto exit position (see below) is changed in the printer side, this setting is used to adjust the driver's TOF position/paper auto exit position to the positions set in the printer. The TOF position/paper auto exit position is the paper feed position that the printer mechanically registers when paper is inserted, regardless of data from the host

Next, the margin (top/bottom/right/left) setting that is usually done in Page Setup in an application configures the Unprintable Area of the application within the above-mentioned Unprintable Area (within the larger printable area). Therefore, setting Unprintable Area and Margin in an application are totally different functions.

For example, if you set "Unprintable Area Top → 1 inch" and set "Top Margin → 2 inches (Unprintable Area: 1 inch is included)" in the menu of an application, the printer behaves as follows.

The application judges that the top 1 inch of “Top Margin 2 inches” is the printer’s mechanical Auto Loading position, therefore the application does not produce data for the actual data transfer. Thus, the application produces data while ignoring the data in the first 1 inch from the top of that data. Unless you set the printer Auto Loading to 1 inch, you cannot get the printing result you expect.

This function is valid with printers that support Auto Loading. Although this printer does not support Auto Loading, the printer menu setting has “Top Adjust.” Thus, you can access this function by changing this menu setting.

Normally, you need not change, but use this function as needed.